MARINE RECORD

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BIOGRAPHICAL SKETCH.

(Captain James S. Dunham.)

James S. Dunham, president of the Dunham Towing & Wrecking Co., of Chicago, was born at Balston Spa, Saratoga County, New York, on January 31, 1837. When he was fourteen years old, he began his marine career as a cook on a Hudson River sloop. The wages paid for that service in those days were three dollars a month. In 1854, after serving in various capacities, Mr. Dunham determined to come West. He landed in Chicago, and for the succeeding three years was engaged in the towing line. In 1857 he took the tugs "G. Mosher" and "A. C. Gunnison" from Chicago to New Orleans, La., through the Illinois and Michigan Canal, and down the Mississippi River; the first craft of that description that made the trip at that time. He ran them in that vicinity until 1861, when the War of the Rebellion began. The Confederates confiscated the "Mosher," which afterward was instrumental in causing the flagship of Admiral Farragut, the "Hartford," considerable trouble, by towing a fire-raft up to that vessel, which set her on fire shortly after she had passed the forts below New Orleans. Capt. Dunham left New Orleans with the "Gunnison" for Mobile, Ala. A short time after his arrival he conveyed a company of Confederates from that point to Fort Morgan, at the entrance to Mobile Bay, when they occupied the fortifications. From Mobile he went to Fort Pensacola, Fla., and was there arrested as being a Northern man (in spite of the aid he had rendered the South), and his remaining tug confiscated. He was sent North, and arrived in Troy, N. Y., in May, 1861. After remaining at Troy for a short time, Mr. Dunham went to Philadelphia, and in the winters 1861-62 built a tug boat and brought her to Chicago via the New York and Erie Canal and the lakes and then made Chicago his home. From that time to the present day his business interests have gradually grown until now he is interested in 20 tugs, 16 at Chicago and four at South Chicago. He is also president and general manager of the Chicago Steamship Co., and president of the Chicago Transit Co., besides owning other vessel interests. Mr. Dunham has always taken an active interest in public affairs and has served one term in the Chicago common council, as Alderman, where he was always prominent in everything pertaining to the marine interest. He was instrumental in the passing of the harbor ordinance, whereby the powers of the harbor master were increased and the bridges put under the direct supervision of the vessel despatcher.

Mr. Dunham's more marked prominence of late has been caused by his untiring efforts as president of the Chicago River Improvement Association, which was formed for the purpose of obtaining a uniform draft of twenty feet and for removing the obstructions to navigation in the Chicago River. He was instrumental in obtaining the appropriation of $750,000 from Congress for dredging the river, and at present his endeavors are to force the city to lower the crowns of the tunnels under the river, as there is now only about sixteen feet of water over them. Capt. Dunham is also treasurer of the International Deep Waterways Association, and is at all times active in his desire to serve the marine interest.

NOTICE TO MARINERS.

Cleveland, O., July 13, 1897.

The Cleveland Branch Hydrographic Office has received the following notice to mariners from Capt. Wm. S. Hoag, steamer Thos. Wilson:

"On July 10, 1897, at 10:40 a. m., Middle Island, Lake Huron, bearing SW. by W., distant 8 miles, the steamer Thomas Wilson passed a raft built of logs with planks fastened on top of logs with wooden pins for a deck. The raft was made from 16 or 18-foot logs, sufficiently heavy to damage an iron steamer striking bow on."

Masters of vessels are requested to report to the Hydrographic Office anything further seen or heard of this obstruction.

NEW TONNAGE

The Bureau of Navigation, Treasury Department, issued official numbers to the following lake-built tonnage during the week ending July 3, 1897:

CAPT. JAMES S. DUNHAM.

Sail—Glad Tidings, 9 tons, Chicago, built at Racine. Starlight, 31 tons, Chicago, built at South Haven.

Unrigged—Iron Range, 171 tons, Duluth, built at West Bay City. Earny, 35 tons. J. D. McFadden, 75 tons; Nora Kelly, 25 tons; No. 12, 87 tons; No. 14, 16 tons; all hailing from Duluth. No. 13, of the same fleet, was built at Ashland in 1890.

Messrs. Hughes Bros. & Bangs, the extensive contractors, have had built at Noank, Ct., two large unrigged vessels, for use in their government contracting work, one is registered at 547 tons and the other at 641 tons. This firm is well and favorably known on the lakes.

The owners of the steamer James Fiske refuse to pay for the damage recently done to the Portage lake bridge and the craft will be proceeded against. The repair bill amounted to $1000.

PROGRESS IN MARINE EFFICIENCY.

Some idea of the progress in marine engineering during the last few decades may be gathered from the fact that in 1840 a pound of coal propelled a displacement weight of 0.578 ton eight knots, but the earning weight was one one-tenth of this, as 50 per cent of the displacement represented the machinery and fuel, 40 per cent the hull, and 10 per cent, or 0.057 ton, the cargo; in 1850, with iron vessels and the screw propeller, a displacement weight of 0.6 ton was propelled nine knots by the pound of coal, but the proportion of cargo had risen to 27 per cent, or 0.16 ton; in 1860, with high-boiler pressure and the surface condenser, 0.82 ton displacement was propelled ten knots, and the cargo was 33 per cent, or 0.27 ton; in 1880, in the freight steamer, 2.1 tons displacement was propelled ten knots, with still 50 per cent, or 1.05 tons of cargo; in 1895, there were two classes of freight boats, the "tramp" propelling thirty-four displacement tons eight and a half knots, with 60 per cent, or two tons of cargo, while at the same time the huge cargo steamers of the North Atlantic were driving a displacement of 3.14 tons twelve knots, with 55 per cent, or 1.7 tons of cargo—on the passenger steamers, too, the cargo weight being down to 0.09 ton per pound of coal.

The foregoing may seem to be the acme of economy of speed and carrying capacity, but so far as the latter feature is concerned, the figures are underestimated, as for instance, there are on the lakes today modern-built steamers weighing with machinery 2,000 tons, which will carry a cargo of 5,000 and not only will, but are doing it regularly.

PISCATORIAL PROPAGATION.

The work of the United States Fish Commission during the past season has been enormous. Over 100,000,000 cod fry hatched at Gluocester and Wood's Holl have been planted at the fisheries on the New England coast and 200,000,000 shad collected in the Potomac, Susquehanna and Delaware Rivers were distributed along the Atlantic Coast from Massachusetts to Florida. About 100,000,000 lobsters have been taken to Rockland, Me., and New London, Conn. These are being liberated by several vessels engaged in the work. From the hatcheries on the great lakes, devoted exclusively to white and lake trout, 125,000,000 white fish fry and 17,000,000 lake trout fry have been hatched and planted. The hatcheries at Quincy, Ill.; Neosho, Mo.; Manchester, Iowa; Leadville, Colo., and San Marcos, Texas, have collected and distributed 3,000,000 trout and about 100,000 bass.

* * *

The international congress of naval architects and marine engineers began its sessions for the present year on July 6, in the Imperial Institute, London, England. All the naval and marine nations of the world were represented, the larger contingents being from France, Germany and the United States. The president, in his opening address, paid special tribute to the prominent part taken by American genius in the art of naval construction. Fulton's service were spoken of with all the respect due to such a genius, and the old supremacy of the American clipper was frankly admitted. The proceedings of this congress, as of those held in previous years in Paris, Berlin, Hamburg and Stettin, will not fail to be productive of good practical results to the ship-builders and marine engineers of all nations. It is by such means that the advanced experiences of the leading maritime nations become the common property of all.

NEWS AROUND THE LAKES.

BUFFALO.

Special Correspondence to the Marine Record.

There is a move on the part of the elevator owners to lower the rate of insurance, which they have for a long time considered too high. Though they do not care to talk about the situation they have of late been considering the propriety of pulling out of the companies and carrying their insurance on their own account. So far as can be learned they are not well agreed on the proposition, most of them holding that it would be too much of a load for them to take their insurance on their own hands, even if all the interests could be brought in. There is a proposition to carry on a line large enough to cover the small houses, which would of course be a mere drop in the bucket with the larger ones. One owner says he has not been consulted, so he imagines that he is to be left out. From all this it appears that nothing very definite is to come out of the move, unless it be that the insurance agents can be induced to make lower rates on account of the canvassing of the situation. An elevator owner has made a careful estimate of the amount of premiums paid to the companies and says that one elevator could be burned every year and the companies would still make money out of elevator insurance. As the losses are much less than this it appears that the elevators have a good case.

When the Union Transit Liner Eber Ward went ashore at Whitefish Point on the 24th of April last, very material service was rendered her by the life-saving crew under Capt. S. F. Bernier, and the facility with which she was released was in considerable measure due to this assistance. Manager French, on learning the facts, sent a check for $40 to the captain, but it has been returned with a note stating that these crews are not allowed to accept pay from persons to whom they may have rendered assistance. It has therefore been thought best to make public acknowledgment of the good work of the crew, as nothing beyond this will be permitted by the department.

It is reported that lake shipyards are bidding on a steamer and three barges to be built for Chicago vesselmen. The Bessemer Line, it is said, will also add to its fleet this fall. However, the latter item may be, I know that figuring is being done on some special new tonnage.

CHICAGO.

Special Correspondence to the Marine Record.

At the shipyard here the tug Tacoma was in dock for repairs to stern bearing, the steamer I. M. Weston for part new stem and new stern iron, the steamer City of Charlevoix for repairs to stern bearing.

Capt. John Prindiville chartered the steamer Norwalk for corn to Kingston at 2¼ cents, the steamer John N. Glidden and barges Aberdeen, Sophia Minch and Warmington for corn to Buffalo at 1¼ cents.

A day or two ago the tug Welcome of the Independent Tug Line arrived off this port with a fleet of seven schooners in tow. They were the Kate Lyons, Annie O. Hansen, J. V. Taylor, Barbarian, Belle Brown, Lucia A. Simpsons and Mars.

Leroy Rogers, aged 22 years, jumped overboard from the promenade deck of the steamer Virginia and was drowned Monday night off Kenosha. The steamer was stopped and one of her lifeboats went in search of the young man, but without success.

J. J. Rardon & Co. chartered the steamer Aragon for corn to Prescot, Ont., at 2¼ cents, the steamer Argonaut for corn to Prescot at 2½ cents, the steamer Ranney for rye to Buffalo at 1¼ cents, steamer City of London and Sacremento and barge Abyssinia for corn to Buffalo at 1¼ cents.

The Ford River Lumber Co.'s schooner Resumption, on Monday, collided with Dearborn street bridge and carried away her jib-boom, fore topmast, main topmast head and mizenmast. The accident was caused by the bridge being swung too far around and catching on to the mizen boom topping lifts. The wheelsman had his hand badly crushed by the mizen boom, which fell across the wheel.

H. W. Cook & Co. chartered the steamer Aztec for wheat to Cleveland at 1¼ cents; barge Zapotec for wheat to Sandusky at 1¼ cents; steamer New Orleans for corn to Erie at 1¼ cents; steamer Sanilac for lumber, Manistique to Chicago, at $1.00 per M. feet; steamer Westover and barge Bliss, lumber from Manistique to Chicago, at $1.00 per M. feet.

The government work of dredging Chicago river to a depth of 17 feet has been going on rapidly, and the south branch is completed to the south fork. The north branch is finished to North avenue. At the entrance to the south fork an unexpected obstruction has been encountered. Instead of soft mud and clay the dippers of the dredge are working in a streak of hardpan, which crops out there, and several boulders have also been met.

James A. Calbick & Co. chartered the steamer Toltec and consort Miztec, steamer J. H. Prentice and consor Halsted and Middlesex for corn to Port Huron at [illegible] cent, the steamer Nicaraugua and consorts Paisley and Grampian for corn to Kingston at 2⅜ cents; steamer J H. Shrigley and barge Aloah for lumber, Ashland to Chicago, at $1.50 per M. feet; steamer Adele Shores for corn to Port Huron at 1 cent, and hemlock ties, Madeline, Lake Superior to Chicago, at 9 cents, free over rail; steamer Francis for ties, Alpena to Chicago, at 5 cents, free over rail.

DETROIT.

Special Correspondence to the Marine Record.

The state of Connecticut is now after the condemned old war vessel Yantic and the Detroit naval reserves will have to pull every possible string so as to secure her detail to the City of the Straits. The Cleveland reserves purchased and hold the revenue cutter Johnson and the local body should have style enough about them to fight hard for the Yantic so as to be on a par with the Forest City corps.

The immigration inspector here says he is not satisfied with the provision of the law, which allows a Canadian to go back and live in his own country after he has taken out the papers to indicate that he is a naturalized American. The inspector is of the opinion that he is an American for revenue only; that he is a Canadian at heart. The Canadian-American masters and engineers will always give the preference to Canadian sailors or engine assistants when they need men, he says, and that it is not uncommon for them to ship Canadians who have made no pretense of becoming American citizens, in open violation of the law. Mr. McGlogan gives several instances of the methods by which Canadians endeavor to secure work on American boats, but declines to allow them to be made public, as they would only serve as information for others who would do the same.

Capt. Thomas Cosgrove, of Port Huron, who has been confined in jail here for the past nine months, was released on his own recognizance on Wednesday by Judge Swan, of the United States court. Cosgrove was indicted last November by the grand jury on the charge of obstructing protests. He was first proceeded against in the recorder's court for taking away the schooner Aurora, which was under a libel, and sailing her from Port Huron to Sarnia, Ont. He was extradited on this charge and arraigned in the recorder's court, where he pleaded not guilty. He was allowed to go on bail and returned at once to Canada. Finally he was arrested in Port Huron by the United States marshal. Judge Swan refused to release him on a writ of habeas corpus, and he had been confined to the jail ever since last November. The case will now be appealed to the Supreme Court. Cosgrove's attorney, E. H. Sellers, claims that under the present treaty existing between the United States and Great Britain they have no right to hold his client for crime committed before the extradition papers were issued.

Concerning the car ferries to be run between Detroit, Windsor and Sandusky, it is said that the Baltimore & Ohio Railroad Co. will have no financial interest in the ferry company, but will have a traffic arrangement which it is expected will be mutually beneficial. At Detroit and Windsor the ferry line will connect with the Grand Trunk Railroad, and through that line with the Wabash, the Detroit, Lansing & Northern, the Flint & Pere Marquette and other railroads leading from Detroit and Windsor. Two car ferries, it is reported, with a capacity of twenty-eight cars each, will be placed in service, and such additional barges will be furnished as the business may demand. This traffic arrangement will give to the Baltimore & Ohio entrance into a very large territory north of Sandusky and Toledo, which hitherto it has not extensively operated in. Detroit and the territory adjacent will also be the gainers by having another direct and short route to the Atlantic Ocean, the Baltimore & Ohio's port being Baltimore.

CLEVELAND.

Special Correspondence to the Marine Record.

Quite a number of boats laid up this week on account of dull chartering and low freights. The only people who are kept busy on the river front just now are those engaged in the passenger and excursion lines.

Mr. Bowers, manager of the Bessemer fleet, has found it necessary to give the masters in the Rockefeller Line a shaking up. Capt. Clint Ennis and Bernard Neilson have been succeeded by other masters, so that besides promotions, vacancies have also been filled in.

Capt. Hearnes, of the small schooner Rival, had an attack of sunstroke while on the deck of his vessel at this port a few days ago. The ancient mariner is now about 75 years old, nearly all of which time has been spent afloat. His conditon is considered critical.

The large Corrigan Line steel schooner Amazon has the distinction of carrying the largest cargo that ever was floated on the lakes, 6.013 tons of iron ore from Duluth to Lake Erie, is a record that leads all former efforts in the direction of transporting bulk or any other kind of cargoes.

The Nelson Bloom has been in the Cleveland Dry Dock this week to have butts calked and be searched up.

At the Ship Owners' Dry Dock the steamer Wallula is receiving extensive and thorough bottom repairs. The steamer Mecosta for repairs to her stern through the Rappahannock running into her. The tug Kennedy was also in dock this week.

It seems that the Bessemer fleet have been dropping into casualties this week, and several of them are now in the hands of the shipbuilders or ready to go there for repairs. All is not velvet in the shipowning line these times, although a fair share of the soft stuff has been captured in the past, but those good old days are gone never to return and that's all there is to it.

Some trouble has been experienced this week through shoal water at the entrance to the port, brought about as Col. Smith, Corps of Engineers, U. S. A., recently pointed out, through the city dumping refuse to make land and allowing it to wash around, so as to deposit in the channel or fairway. A change of wind allowed the water to raise a few inches and the grounded vessel was afterwards released with the assistance of several tugs.

Work at the yards of the Globe Iron Works Co. is again looking brisk, as with the completion of the Polynesia, now the largest schooner on the lakes, and built for Capt. James Corrigan, the keels of the two new revenue cutters have been laid. As these vessels will be superior government departmental tonnage, a large amount of skilled labor and high-classed work will be put on them, thus insuring employment for a number of men for several months.

It is likely the hull and the main portions of these cutters will be completed before the beginning of cold weather, but they are not likely to go into commission before next spring. According to the terms of the contract with the Globe Iron Works these vessels are not to be ready for use before May 1, 1898. Work will be pushed on them, however, as rapidly as possible with a view to getting them in shape to be housed over for the winter season, and considerable progress will be made in fitting up the interior during that period. When completed these vessels will be used on Lakes Erie and Huron, and, there will not be any finer craft afloat than these additions to Uncle Sam's revenue cutter service.

Capt. James Jackson, of the "Soo" Line steamer St. Paul, is kept busy from port to port in spite of the rather dull times. Capt. Jackson hails from Sacketts Harbor, N. Y., a port, by the way, which has turned out some of the best masters and pilots on the lakes. The eastern end of Lake Ontario had a high reputation for good shipmasters in the by-gone days of sailing craft and it is well known that such men make the best masters in steam after they once get broke into the change.

The small sail yacht N. E. W. S., Capt. Holmes, is still at this port preparing for her cruise around the world. She will probably leave here this afternoon or early on Friday, and her next port of call will be Buffalo. While here the N. E. W. S. gave several trips to those wishing Capt. Chas. J. Holmes and his shipmate, A. W. Whiteford, success on their perilous undertaking.

The members of the life saving crew at this port have been kept very busy during the late heated term picking up the former occupants of capsized boats and rendering assistance to small craft in distress, hardly a day has passed within the last two weeks without Capt. Motley and his well drilled crew rendering excellent service at and near this port, so frequent has been the calls that if nothing more was done during the season they have amply repaid for the up keep of the station for the whole year.

My contemporary on the Leader here must have had a lapse from his usual "walk the chalk" methods of newsgathering, for in Wednesday's issue he calls some second-class trade literature, an elaborate business directory for marine purposes, crowning his otherwise muddled conception, by describing the book as being "in the same position to American commerce as the Lloyd's Register is to English shipping. Of course, my young friend never clapped eyes on even the covers of a Lloyd's Register, much less glanced at the contents, however, the guess goes. Comparisons are frequently odious any way, but none more so than the foregoing.

SACKETT'S HARBOR, N. Y.

Special Correspondence to the Marine Record.

Major Stanton, Corps of Engineers, United States Army, Oswego, N. Y., in charge of the conservancy and improvement of rivers and harbors at the lower end of Lake Ontario, has begun to dredge at Sackett's Harbor, N. Y., under the $5,000 appropriation recently set aside for that purpose.

On Friday the Frontenac brought up an old cannon. Upon examination it proved to be of very ancient design, about five feet in length and twenty inches butt, and sixteen inches at the nozzle, with nine-inch bore reimbursed with iron bands or rings, and weighing about 1,500 pounds. There seems to be no doubt that this gun was captured by the Americans from the British at Little York, now Toronto, during the war of 1812, and it is a very valuable relic of that war.

Other improvements are also being made at Sackett's and there seems no reason why the shipping trade should be permitted to languish at this desirable lake port once an adequate depth of water was obtained.

FLOTSAM, JETSAM AND LAGAN.

Camp is a trim little craft 68 feet long, 18 feet beam and 6 feet hold, measuring 49 tons gross. She is considered a fleet sailer.

The shipments of iron ore from all ports to Lake Erie to July 1 amount to 3,028,884 tons, as compared with 3,680,465 tons for the corresponding period last year.

On her second trip down Lake Superior the large Corrigan steel towbarge Amazon carried 6,013 net tons of iron ore taken on at Duluth. Thus she has broken her own and all other Lake Superior cargo records.

The steamers Ida E. and Robert C. Wente are temporarily laid up at Manistee.

The fine of $500 imposed upon the steamer Promise at Cleveland has been remitted.

Three of five 100-feet cribs to be added to the south harbor pier at Manitowoc are in position.

On July 4, 5 and 6 the whaleback steamer Christopher Columbus carried 11,000 excursionists out of Chicago.

The steamer John Oades and consort Red Wing have been ordered out of commission at Ashtabula.

The word tariff is derived from Tarifa, a seaport of Spain, about twenty miles from Gibraltar, where the Moors, during their supremacy in Spain, levied contributions according to a certain scale on vessels entering the Mediterranean Sea.—Keystone.

General Manager Fred D. Underwood, of the Minneapolis, St. Paul & Sault Ste. Marie Railway, has presented Capt. C. D. Ross, of the steamer Alice Stafford with a handsome gold watch and chain as a token of appreciation of services rendered in the Soo Line.

While driving piles for the new Muskegon harbor pier extension the contractor had difficulty on part of the work. It was ascertained that the sunken wreck of a coal-laden schooner was directly in line with the improvement.

Commander Folger, U. S. N., threatens to prosecute the next captain who runs into and displaces the gas buoy on the middle ground at Port Huron. He will also proceed against captains who have carried away stakes and lightships, as there is plenty of room to pass without doing so.

A very disastrous fire took place on the Youghio Gheny coal dock No. 2 at Superior, Wis., this week. The fire originated from a stroke of lightning and although every effort was made to extinguish it the damage to dock and anthracite coal piles will be very heavy, estimated at $30,000.

A party of ladies made the descent to the sunken steamer Pewabic on Saturday last. Mrs. Persons, wife of the keeper of Tunder Bay Island life saving station, was among the number, and they experienced no inconvenience at the depth of about thirty fathoms, while a good view was had of the wreck.

Brisk competition and a friendly rivalry has opened up this week on the St. Lawrence river passenger route between the Folger Bros. and the Richelieu & Ontario's Line. The former line flies the stars and stripes between Clayton, N. Y., and Montreal, while the latter is the old established Canadian line with general offices in Montreal.

On Saturday the steamer H. A. Root returned to Alpena from the Pewabic wreck after an absence of a week. She brought in considerable copper, also the mast of the sunken steamer. The latter is 16 inches in diameter, 75 feet long and is in good condition. Three trucks and the governor off the engine were also brought in. Diver Smith says he has seen nothing of the safe.

Capt. Charles E. Moody, recently appointed to the Bessemer Line steamer John Ericsson, is a Milwaukee tugman, who began his career as a steamboat master in the Flint & Pere Marquette Line, going next into the Soo Line and then into the Rockefeller fleet. As a handler of steam vessels, large or small, Capt. Moody has no superior, and his promotion is a deserved one.

Last week the dry dock of the American Steel Barge Co. accommodated three vessels with repairs. They were the Corsica, J. Emory Owen and barge 131. The vessels in each instance were surveyed by Capt. Joseph Kidd, formerly superintendent of the shipyard of the company, but who is now located in the Board of Trade building, where he has opened an office as a marine architect, surveyor and consulting engineer.

We are sorry to learn that our long-time friend Capt. Thos. Chron, of Bay City, Mich., has through the somewhat dull times been held off from any appointment so far this season, and we can but hope that his enforced idleness will not continue for a much longer period. Capt. Chron has been in the harness since July, 1844; commenced his lake career in 1849, and as master since 1855. Twenty-one years of this time was spent in steam and the remainder of the time in sailing vessels. Over half a century or in fact fifty-three years, shows a faithful, arduous experience such as only the best of hardy stock could stand and this, too, by observing the highest principles of hygiene.

The large Scotch vessel Benares, of 1,646 tons, is reported to have made the quickest sailing ship passage ever known. She is stated to have left Table Bay on the 21st of April and to have arrived at New York on the 1st of June, having made the passage in the unprecedented time of 40 days. The Benares is an iron barque, built at Glasgow in 1877, and owned by Mr. H. J. Watson, of that city. This passage of the Benares is in striking contrast to the run of the Norwegian barque Nordby, which took 136 days to accomplish a voyage from New York to Port Natal, South Africa. She met with heavy weather, and had spars and rigging seriously damaged Two of her crew were washed overboard and drowned.

DULUTH-SUPERIOR BRIDGE.

The big steel bridge uniting Superior, Wis., and Duluth, Minn., was opened for traffic on Tuesday with appropriate ceremonies. Mayor Truelson, of Duluth, and Mayor Starkweather, of Superior, with prominent citi-

foot passenger ways. The structure cost about $1,000,000.

zens from either city, met upon the great draw span, and in the presence of thousands of spectators, with appropriate speeches opend the great interstate highway.

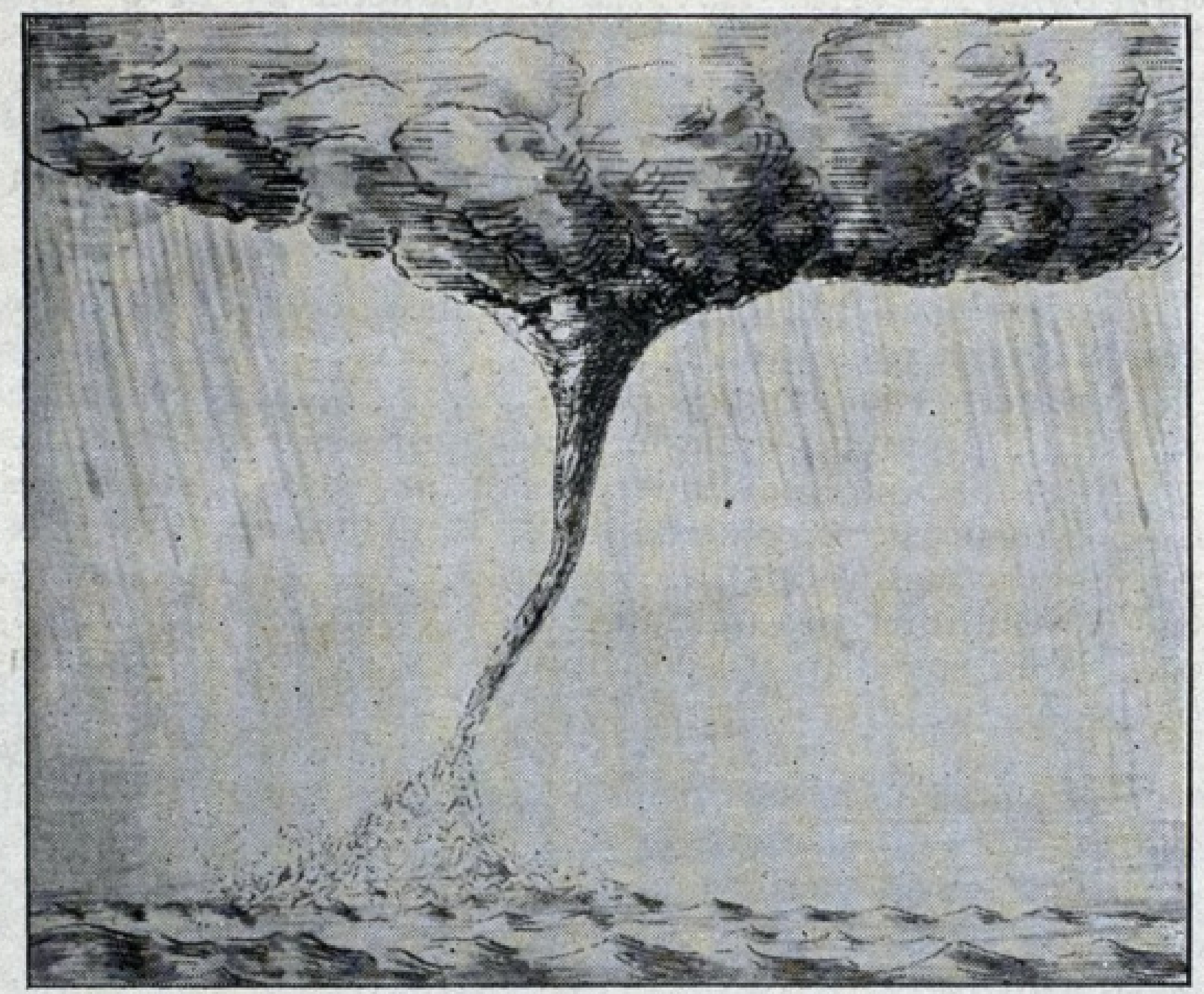
Agitation for the construction of the bridge between the cities was begun about six years ago, and despite all objections and other obstacles was finally carried through to completion. The center draw is 491 feet long, and weighs 2,200 tons; the total length of the bridge is 1,094 feet between approaches. A clear waterway of 200 feet is opened on either side of the draw pier when the span is swung. Tugs and small vessels pass under without swinging the span, which makes the turn in twenty seconds. The structure is fifty-eight feet wide, arranged for two railway tracks besides street railway, wagon and

WATERSPOUTS ON THE LAKES.

Illustrated.

Several waterspouts were seen to travel down Lake Ontario in the vicinity of Oswego last season and were duly reported in the columns of the Record. Word now comes from Sandusky that on Tuesday last, shortly after 4:30 p. m., a large number of Sanduskians were fortunate in witnessing a gigantic waterspout, which formed in the south passage, Lake Erie, between Marblehead and Put-in Bay. It lasted fully fifteen minutes.

Previous to this remarkable phenomenon the atmosphere was unusually clear and far away objects over the water could be distinguished with a wonderful degree of distinctness, and when this is the condition of affairs vesselmen forecast a heavy blow. The prediction proved true, as clouds were seen to form, apparently over Put-in Bay. As they moved in a low east by south direction they took up large volumes of water and whirled it through the air at a terrific rate of speed. The dimensions assumed by the waterspout were, approximately, twenty-five feet in diameter and reached a height of several thousand feet. It was an awe-inspiring sight to witness the fall of the immense column of water when it broke away from the influence of the whirlwind which caught it up from the surface of Lake Erie.



USUAL FORM OF WATERSPOUT.

A waterspout on land would be called a whirlwind, and the accepted theory of their cause is rapidly rising currents of heated air creating a vacuum to which the cooler air rushes from all directions, naturally following an erratic upward course. The olden theory that waterspouts are of deadly danger to vessels encountering them does not seem to be borne out by the list of casualties resulting therefrom, at least not in those cases noted on the lakes, though we have yet to learn of a vessel running into one, consequently there is no telling what effect it really would have, especially on a small craft.

A GREAT PROJECT IF CARRIED OUT.

Extensive projects are the order of the day and canalizing, mining, shipbuilding, machinery, etc., are being carried out in many instances on such a stupendous scale as would have made the hair stand on end of those who were up till a decade or so ago actively engaged in the above several industries. Relative to the foregoing it is now rumored that a syndicate of Chicago and New York capitalists, among whom are mentioned K. H. Bell, of the Hammond Packing Co., C. B. Shedd, of the Knickerbocker Ice Co., Mayor Wm. Penman, of East Chicago, Mayor F. R. Mott, of Mammond, Edward Roby, John D. Rockefeller, and others, have decided to make a great inland harbor in the Calumet region, using the Wolf river as an entrance and Wolf and George lakes for the basins. They have, it is said, devoted $6,000,000 to the project. Hammond will raise money by bonding to aid the scheme and congress will be asked to build and maintain the entrance.

Sixteen miles of dock frontage will be available within two years, it is claimed, with an entrance 400 feet wide and 20 feet deep. Wolf lake is 2 miles long, 1,000 feet wide and at present averages 70 feet deep. George lake is 1 1-2 miles long. The dredges will bring up clean sand which will be used to fill in adjacent marshes.

OFFICERS ON DUTY UNDER THE LIGHT-HOUSE ESTABLISHMENT.

Treasury Department,
Office of the Light-House Board,
Washington, D. C., May 4, 1897.

The following is a list of the officers on duty under the Light-House Establishment on this date, with the residence or postoffice address of each:

MEMBERS OF THE LIGHT-HOUSE BOARD.

Hon. Lyman J. Gage, Secretary of the Treasury and ex-officio president of the Board, Treasury Department, Washington, D. C.

Capt. Winfield S. Schley, U. S. N., Chairman, Washington, D. C.

Mr. Walter S. Franklin, office 2552 Madison avenue, Baltimore, Md.

Col. George L. Gillespie, Corps of Engineers, U. S. A., Army Building, New York, N. Y.

Mr. W. W. Duffield, Superintendent United States Coast and Geodetic Survey, Washington, D. C.

Capt. Robley D. Evans, U. S. N., 324 Indiana avenue NW., Washington, D. C.

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Captain, C. of E., U. S. A., Engineer Secretary.
Approved:
LYMAN J. GAGE, Secretary.

LAKE FREIGHTS.

With the collapse of the coal freight market through the continued strike of the miners and the washouts on the railroads from the iron ore mines, which will take a week yet to repair, besides pumping out the pit mines—cargoes were never so scarce since the opening of navigation and many vessels have been ordered to lay at their docks until freights take an upward tendency or at least until more cargoes are offered.

There has been a little uneasiness felt about fuel for the vessels now running, but the regular liners including passenger boats, seem to have fair stock piles to work on and there is yet considerable coal in sight when cleaned up from various quarters, although the price of fuel has gone up to $2.25 and one railroad confiscated some coal in transit for its own use, a perfectly legitimate proceeding by the way.

The anthracite coal trade out of Buffalo is equally as slow and the few recent charters only show 20 cents to Duluth and this is all that has been shipped for about a week past, Lake Michigan ports 20 cents also. No fuel will be given at Erie unless ore carriers load anthracite, though the price of soft coal for fuel is still at $2 and the same at Ashtabula with the fuel men taking care of tonnage in good shape so far.

A better freight market is found at Chicago and all handy vessels could be chartered this week at 1¼ cents, the largest steamers such as can only be loaded at South Chicago, had no show whatever. Offers were made to leave Lake Erie ports light so as to catch the 1¼ cents on corn down and this is indication enough of how slow business is at lower lake ports as well at the head of the lakes.

Taking the outlook all around, this week has been the slackest of the season and freights are likely to continue dull throughout the month, after that, the deluge. coal, ore and grain must be moved before the close of navigation and the present dullness may be the harbinger of a prosperous fall trade.

CORRESPONDENCE.

☞We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

THE SCHOOLMASTER ABROAD.

Chicago, Ill., July 12th, 1897.

Editor of the Marine Record.

I wish to extend to you my sincere thanks for publishing the correspondence between Mr. Geo. L. McCurdy and myself concerning the prizes he has so kindly offered for my school. It is all that is necessary from me to refute the article published in your valuable paper as quoted from the Detroit Free Press. The writer of same, as well as the prominent captain interviewed were considerably out on their bearings concerning the school—when they began talking about solar observations, etc., for the lake captains. I do teach deep water navigation, but only yachtsmen and members of the naval militia take it up. One yacht captain who took my second course last winter, went on to New York in April and passed a very creditable examination before the local inspector at that port, and received a master's license for the Atlantic Ocean.

My first course is for the lake regions, and Mr. McCurdy's prizes refer to that course alone. It is not necessary for me to defend my work, as I am convinced I have a number of friends who will do it for me; your valuable paper being among them. W. J. WILSON.

AN APPRECIATIVE LAKE SHIPMASTER.

Chicago, Ill., July 14, 1897.

Editor of the Marine Record.

I wish to congratulate you in exposing the ignorance of the writer of the recent article in the Detroit Free Press relative to the Chicago Nautical School.

I have sailed the lakes for twenty years and my knowledge of the subject of variation was limited until I attended Mr. Wilson's school last winter, and under his thoroughness as an instructor I feel that I have mastered a subject that I would not be deprived of for any amount of money. I have found the information of much value and have repeatedly used it to great advantage. If I did not know much about it, I am sure my brother captains know little concerning same. As I have said, I appreciate its value, and the day is not far distant when every mother's son who commands a vessel on the lakes will have to be familiar with it. When such men as Mr. Geo. L. McCurdy and his assistant, Capt. F. D. Herriman, take such interest in it to offer prizes, the next thing we will hear of will be that the local inspector of the various lake ports will have received instructions from their superiors in Washington, requiring them to examine all candidates for licenses thoroughly in the science of the compass. It is as much protection to them as anything they have to consider, and they appreciate the fact.

Mr. Wilson's first course is for the lake captains specially, and is necessary for the lake region. The writer's article is misleading, why did he not confine himself to facts. Such non-sensical talk as he resorts to will not be entertained by many, and even those who side with him will come around in time; they will have to. Not only will the insurance people demand it, but the public as well.

Very sincerely,

WALTER D. HAMILTON.

A TEST OF POWER AND FUEL CONSUMPTION.

The Kaliyuga, owned by the St. Clair Steamship Co., underwent some extensive changes in her machinery last winter at the yards of the Detroit Dry Dock Co., and for the first time in lake practice a guarantee of 700 horsepower on a consumption of 2¼ lbs. of coal was entered into. An excellent showing has been made, according to the following report kindly furnished the Marine Record by Mr. Robert Logan, who represented the owners of the steamer during the trial.

July 13, 1897.

The St. Clair Steamship Co., Cleveland, O.

Dear Sirs.—Herewith, I beg to submit to you report of the results of the tests made on the new machinery and boiler of your S. S. "Kaliyuga" on the 4th and 5th inst., with copies of the indicator cards taken at same time.

Messrs. Calder & Matson represented the Detroit Dry Dock Engine Works, and with myself, this gave us a staff of three operators, so that the scope of the tests are necessarily limited and confined chiefly to ascertaining if the contract stipulations have been obtained, viz.: a minimum of 700 H. P. under ordinary working conditions with a maximum consumption of 2¼ lbs. of Pittsburg "run of mine" coal per I. H. P. per hour.

The tests were begun at 10 p. m. on the 4th of July, just leaving Detour, and continued without intermission until 4 a. m. of the next day, but previous to starting the tests the vessel was stopped at Detour, the air pump examined and one of the bucket valves which we found broken was replaced, this opportunity was also taken to "blow" the boiler tubes.

The engines were run during this trial just as the engineer usually sets them for running with the vessel loaded, except that we used slightly more injection water than he does, a change which did not improve the results as we afterwards discovered.

Indicator cards were taken every half hour and other particulars noted at same time; the coal was weighed into the firehold in 200 lbs. lots and carefully tallied; the ashes were not weighed nor taken into account, and the fires were in the same condition five minutes after the trial as they were in at the commencement.

The particulars of the machinery are as follows:

Diameter of cylinders..............H. P. 22″—L. P. 46½″
Ratios of cylinders..............................1 to 4.398
Stroke..45 inches
Piston rods..................................4¾″ diameter
Main boiler................12′ 6″ diameter by 12′ 0″ long
Working pressure................................130 lbs.
Furnaces..............................2 at 46″ diameter
Grate surface............................42.2 square feet

The mean results of the six hours run and the 13 sets of indicator cards were as follows:

1. Steam pressure, eng. room gauge....117 to 120 lbs.
2. Receiver pressure..............................12 lbs.
3. Vacuum (by gauge)......................25.25 inches
4. High pressure, cylinder, mean pressure....63.8 lbs.
5. Low pressure, cylinder mean pressure....10.8 lbs.
6. Mean pressure referred to L. P. cylinder....35.3 lbs.
7. Total revolutions..............................26,750
8. Revolutions per minute............................74.3
9. Piston speed in ft., per minute..............557.25
10. Indicated Horse Power,, H. P. cylinder......400.80
11. Indicated Horse Power, L. P. cylinder......303.30
12. Indicated Horse Power, total................704.10
13. Total coal burnt in 6 hrs. 5 min..........6,000 lbs.
14. Coal burnt, per hour......................13.15 lbs.
15. Coal burnt, per hour, I. H. P., per hour....1.867 lbs.
16. Coal burnt, per sq. ft. of grate............31.10 lbs.
17. Steam used as per No. 9 H. P. card......12.64 lbs.
18. Revolutions of fan engine.................195 to 200
19. Air pressure at fan.......................2.25 inches
20. Feed water entering heater............125. degrees
21. Feed water entering boiler.............138. degrees

In calculating the horse powers I have deducted the areas of the piston rods from the lower ends of each cylinder and in every other way the test was made rigorously impartial, and the results as shown by the foregoing figures are eminently satisfactory, the stipulated horse power being attained and the coal consumpt being well within the limit, in fact, the result obtained from this machinery compares favorably with that from many of the triples, and no attempt was made to deviate from the ordinary conditions of working, the engines running at their usual gait and the firemen keeping the steam almost steady at 120 lbs. without any unusual exertion on their part, of course on this vessel there are no auxiliaries such as electric engine or steering engine to provide steam for.

During the trial, and all the time we were on the boat, the engine and pumps worked most smoothly and satisfactorily, with a total absence of any vibration in the hull, and including the boiler and fan, all the parts appear to be carefully and well proportioned. It is to be noted that the boiler tubes have been slightly increased in diameter over former practice and Mr. Calder claims a resulting improvement.

I would here suggest that the fan should be fitted to draw its supply of air from the engine room, so as to ventilate the latter and avoid the dust and ashes which now goes through it, and which must soon accumulate to the detriment of the surface for heating the air going into the furnaces.

On the 5th, between the hours of 3 and 5 p. m., we made a two-hour full power trial with the following results:

1. Steam pressure.........................115 to 120 lbs.
2. Receiver...................................17 to 19 lbs.
3. Vacuum......................................24.5 inches
4. H. P. clinder, mean pressure, 5 sets cards..67.20 lbs.
5. L. P. cylinder, mean pressure, 5 sets cards..15.54 lbs.
6. Mean pressure referred to L. P. cylinder..30.92 lbs.
7. Revolutions per minute..............................80.6
8. Ind. Horse Power, H. P. cylinder..............468.0
9. Ind. Horse Power, L. P. cylinder..............473.0
10. Ind. Horse Power, total..........................941.0
11. Total coal burnt in 2 hours................3,600 lbs.
12. Coal burnt per I. H. P., per hour..........1.92 lbs.
13. Coal burnt per sq. ft. of grate.............42.65 lbs.
14. Air pressure at fan.........................3.25 inches.
15. Feed water entering heater....................133 degrees
16. Feed water entering boiler....................148 degrees

This trial was made durnig the latter half of the watch and yields a remarkably good result.

On the run from Detour to Ft. Gratiot, the time was 26 hours 56 minutes, giving an average speed of 8.35 miles per hour, and the slip of the propeller as near as I could estimate was 17 per cent.

The indicator cards herewith are copies of those taken during the six hours' trial and are indentical in character with those taken in the full power run only, that in the latter, steam was carried further in the H. P. cylinder and produced fuller cards.

The cards are excellent and show that the valve motion is as near being perfect as possible and I must say that, taking everything into account, I consider this plant in the "Kaliyuga" to be one of the best and one of the most efficient ever installed on any lake vessel.

LAKE SUPERIOR TRAFFIC.

OFFICIAL REPORT OF FREIGHT AND PASSENGER TRAFFIC TO AND FROM LAKE SUPERIOR FOR THE MONTH OF JUNE, 1897, INCLUDING STATISTICS OF THE UNITED STATES AND CANADIAN CANALS AT SAULT ST. MARIE, MICHIGAN AND ONTARIO.

EAST BOUND.

ITEMS.	U. S. CANAL	CAN. CANAL	TOTAL,
Copper, net tons	19,671	730	20,401
Grain, bushels	3,452,909	347,227	3,800,136
Building Stone, net tons	1,758	60	1,818
Flour, barrels	1,041,403	185,041	1,226,444
Iron Ore, net tons	1,204,604	472,001	1,676,605
Iron, Pig, net tons	200		200
Lumber, M. ft. B. M.	117,614	131	117,745
Silver Ore, net tons			
Wheat, bushels	2,183,778	2,043,264	4,227,042
Unclass'd Frt. net tons	34,027	10,139	44,166
Passengers, number	1,863	546	2,409

WEST BOUND.

ITEMS.	U. S. CANAL	CAN. CANAL	TOTAL.
Coal, (hard) net tons	46,719	8,500	55,219
Coal, (soft) net tons	330,943	101,570	422,513
Flour, barrels		250	250
Grain, bushels			
Manf'd Iron, net tons	14,410	59	14,469
Salt, barrels	13,559	160	13,719
Unclass'd Frt., net tons	38,630	12,103	50,733
Passengers number	1,391	830	2,221

East bound freight, net tons.......................2,255,957
West bound freight, net tons.........................555,016

Total.......................................2,810,973

Total craft—United States...............................1,927
Total craft—Canadian......................................707

Total..2,634

Total registered tonnage—United States..........2,073,367
Total registered tonnage—Canadian...................610,771

Total.......................................2,684,138

The Hydrographic Office announces the publication of a new chart, No. 1582, of Lake St. Clair and St. Clair and Detroit Rivers, made on a scale of 6-10 inch to the mile. This chart is made more complete by the addition (on the same sheet) of five plans of special localities, made on a scale of 1½ inches to the mile; these plans include St. Clair Flats, Port Huron, approaches to Marine City, Fromefield to St. Clair, and Detroit River between the city of Detroit and Lake St. Clair. The chart and plans have scales in both nautical and statute miles. This chart may be obtained from the agents for the sale of Hydrographic Office publications.

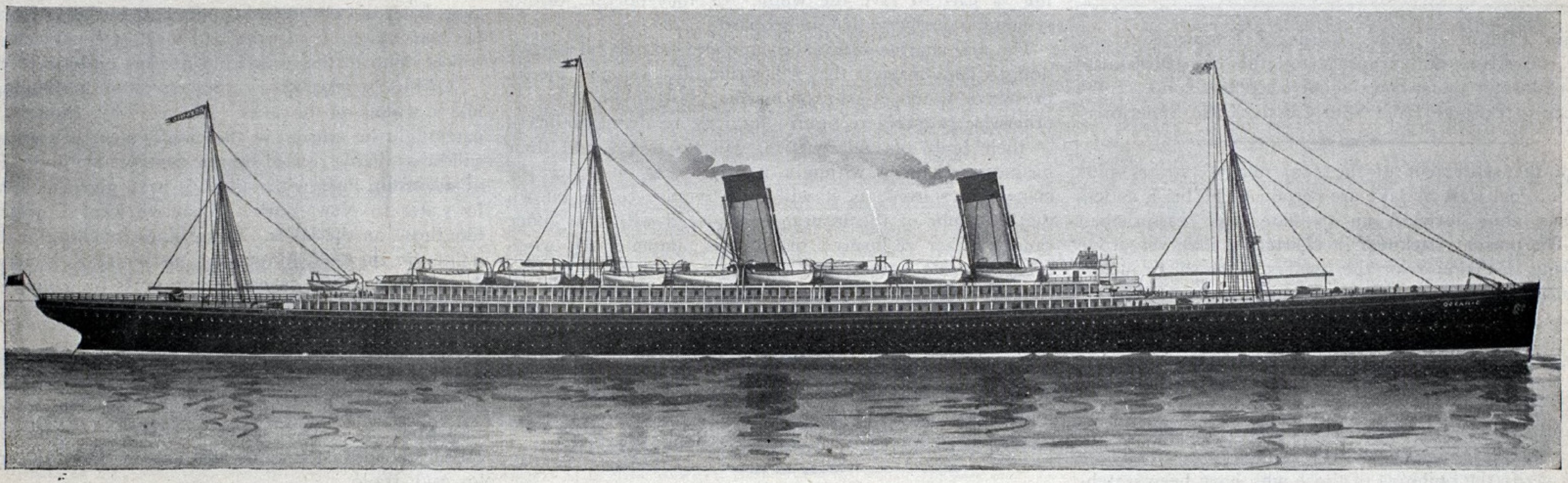
THE WHITE STAR ATLANTIC LINER OCEANIC.

(Illustrated.)

The announcement was made several months ago in these columns that the White Star Line of Liverpool had arranged with Messrs. Harlan & Wolff, of Belfast, for the building of a large passenger steamer for their Atlantic service, and it was stated that the vessel would be propelled by three screws. Through the courtesy of the American Shipbuilder we are enabled to present an illustration showing the general appearance of the ship when finished and the following particulars are reprinted from that journal:

"It would be a pleasure to be able to announce that the gigantic steamer Oceanic was to be propelled by triple screws, as George W. Melville, Engineer-in-Chief of the United States Navy, has done so much to bring about the triple screw system in ships of war—the Columbia and Minneapolis being so fitted—and is anxious to see it adopted in merchant steamers; but, notwithstanding published reports in several of the marine and mechanical journals of Great Britain and the United States that the Oceanic would be driven by triple screws, we must now put to rest such a theory by stating that the Oceanic will be a twin-screw steamer. The supposition that the vessel was to be a high-speed craft, with engines of 45,000 or 50,000 horse-power probably influenced our British and domestic contemporaries in stating that three screws would be used. What the power of the engines is to be the owners and the builders do not care to say at this stage of the construction. But we can state positively, upon the authority of H. Maitland Kersey, that triple compound engines will be used, and not quadruple expansion engines. The theory that it might not be safe to transmit more than 20,000 horse-power through one shaft, gives rise to the belief that the combined engines will not indicate more than 40,000 horse-power and it is surmised that a speed of not more than 21 or 22 knots can be obtained from that power. Indeed, some engineers doubt if over 20 knots can be developed in the Oceanic if the engines are not capable of more than 40,000 horsepower. Be that as it may, the Oceanic will be the most magnificent as well as the largest steamer afloat, being larger than the Great Eastern, as will be seen by comparing the figures.

The Oceanic will be 705 feet long, 685 feet on the water line, 68 feet beam, 50 feet deep, 27 feet draft, and 17,000 tons, gross. The Oceanic will be launched in January and is expected to be ready to make her first trip to New York in the following June. Next to her great size, the most striking feature in the new ship is the fact that no special effort will be made to surpass all previous records in the matter of speed. Hitherto, it is safe to say, speed has been made the first consideration, and to this all other elements, such as carrying capacity, comfort and economy, have been made strictly subordinate. Now, of all the features that go to make a first-class Atlantic passenger ship, speed is by far the most costly, and when it exceeds 20 knots an hour, the most doubtful in its utility. The enormous sacrifice at which high speed is obtained is proverbial. The Oceanic will be an enlarged Majestic. She will have two elliptical funnels, three masts and the twin screws will overlap, the starboard shaft extending further aft than the other to give clearance for the propellers. The shafts will be carried out in a spectacle frame, an arrangement in which the plating of the ship is built out and around the shaft, forming a tubular protection which extends up to the stuffing box gland, and allows the shaft to be inspected at all times. A long turtle deck will extend from the bow aft for over 150 feet. The dining saloon will be placed amidships, and above it will be an unusually large and handsome library. Altogether, provision will be made for carrying 350 saloon passengers with such surroundings of comfort and luxury as have never been attempted before, and the provisions for the other classes of passengers will be on a similar scale. In closing, we may say that the Campania has engines of 30,000 horse-power and has developed 22 knots an hour. She and her sister, the Lucania, have the most powerful engines afloat.



THE WHITE STAR LINE'S NEW TWIN SCREW STEAMER OCEANIC, BUILDING BY HARLAND & WOLFF, BELFAST, IRELAND.

* * *

MAGNETIC VARIATION IN BRITISH COLUMBIA WATERS.

Information received from various sources appears to indicate that the magnetic variation in the waters between the main land of British Columbia and Vancouver Island is changing much more rapidly than is indicated by the notes on Admiralty charts.

When Mr. Stewart surveyed Vancouver harbor in 1891, he found the magnetic variation to be 23 degrees, 25 minutes East, and the variation was set down as decreasing one minute annually. From recent bearings taken by Capt. J. T. Walbran it would appear that the variation at Vancouver is now about 25 degrees East. The magnetic variation shown on Admiralty chart No. 580 at Baynes Sound is about 23 degrees, 30 minutes. Recent observations by officers of the Royal Navy indicate the Easterly variation at that place to be more than 26 degrees. Similar reports from other localities indicate a rapid and well defined increase in the Easterly variation.

Mariners are warned that they may find the easterly variation throughout British Columbia waters greater than is shown on the charts and are requested to forward particulars of any observations they may take for variation to the Chief Engineer of the Department of Marine and Fisheries, Ottawa.

F. GOURDEAU,
Deputy Minister of Marine and Fisheries.

* * *

The highest bridge of any kind in the world is said to be the Leo river viaduct on the Antofagasta railway in Bolivia, South America. The place where this railway structure has been erected is over the Molo rapids in the Upper Andes, and is between the two sides of a canyon, which is situated 10,000 feet from the level of the Pacific. From the surface of the stream to the level of the rails this bridge is exactly 636 1-2 feet in height, the length of the principal span is eighty feet, and the distance between the abutments is 802 feet.

* * *

T. E. Byrnes, of Minneapolis, as attorney for the Minneapolis St. Paul & Sault Ste. Marie road, has petitioned the agricultural department to establish a weather bureau station at Escanaba. The nearest station to this point is Green Bay, 150 miles south.

A SUBMARINE CRAFT.

Richard Raddatz is now giving the finishing touches to his submarine boat and in a few days will start upon a thousand-mile lake cruise, the objective point of which is Chicago. The young inventor and builder declares that his boat will make fully 700 miles of the journey under water.

The object of the trip is not only to give an elaborate public demonstration of the boat's ability to cruise beneath the surface of the great lakes, but to prosecute a novel and extended scientific investigation of submarine currents and temperature and of the nature of the lake bottom at various points and depths. It is proposed, incidentally, to inspect the remains of the steamer St. Albans, which was sunk off Milwaukee in 1881.

Raddatz has full confidence in the ability of his craft to carry out this big undertaking successfully, and he fully expects that when his cgiar-shaped pet pushes her sharp nose into the Jackson Park lagoonhe will be able to unfold a tale of submerged navigation such as no other sailor in all the world's history has been entitled to tell. His faith is not based upon speculation, but rests upon the success of numerous and well-authenticated tests made with both his first and his latest model.

Several of the most courageous young men in Oshkosh, Wis., have gone down into the deep with the plucky inventor, while more numerous but less daring contingents of citizens have stood upon the bank and witnessed the submergence of the curious ship. Their relief when the pilot-house safely appeared above the surface was quite as great as that experienced by those who chose the braver part and dared the dangrs of submarine existence.

The history of the craft, its conception and its building, is full of quiet romance and the simple but dignified reticence of young Raddatz is calculated to inspire a degree of confidence on the part of those who are inclined to question the success of his ambitious efforts. This confidence is increased by the facts that he has persistently shunned publicity and that he holds a responsible position in the employ of one of the largest engine building establishments in the West.

The craft was a slow evolution, but the seemingly insurmountable obstacles which it presented were grappled with and finally solved, at least to the inventor's satisfaction. His labors were conducted with the utmost secrecy and his initial experiments weremade in the same solitary manner in which he had done his work.

This accounts for the fact that, although his first model was finished nearly five years ago, and sustained repeated and satisfactory tests, the general public is still uninformed, save in brief and vague terms, of what Raddatz has already accomplished.

The original of the present boat was secretly launched in September, 1893, but the craft as it now stands should scarcely be regarded as the same object, as its old machinery has been replaced with new which embodies many improvements of the most vital nature.

According to his own record, Raddatz has made about 300 descents with the old and the new boats, and every test has confirmed his statement that the practicability of the craft is now demonstrated.

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CLEVELAND, O., JULY 15, 1897.

Major Clinton B. Sears, Corps of Engineers ,U. S. Army, advertises for propsals for the construction of two breakwater piers, each about 2,700 feet long, at the entrance to Portage Lake Ship Canals, Lake Superior.

With the settlement of the coal miners' strike shipments of coal west by lake are certain to be brisk as less coal has gone forward up to date this season than last. The present slackness in chartering may yet prove a blessing in disguise for the owners of vessel property, inasmuch as freight rates will go a step or two higher.

The monthly official Sault Ste Marie Canal statistics to July 1 show a decrease of about 400,000 tons in the movement of iron ore; a large decline in the shipments of coal, both anthracite and bituminous; a decrease in wheat shipments; and a large increase in the flour movement. These figures verify the opinions of those who have been watching the trade during the season up to date, and further, go as to show that a brisk fall trade is inevitable.

The work of compiling a specially bound list of masters and engineers on lake vessels each spring is labor lost, as there is hardly a week goes by after the opening of navigation without more or less changes taking place. An officer on joining a vessel, by no means marries her, although it used to be and still is believed by a great number of people that an appointment in the spring meant a whole seaon's employment and owners have been sued for dispensing with the services of employes before the expiration of the season, on the grounds, that there was a tacit or verbal agreement or understanding that the service was to be continuous, and in any case, as discharging the officer meant a corresponding loss of employment and prevented in the first place any contract or arrangement being made with other shipowners in the spring, that thereby an injustice had been done and the late employer was to be held responsible for same in the event of the master not procuring other suitable employment during the balance of the season. Such is not the case, however, nor is mutual consent even necessary, shipowners handle their tonnage and per se their employes at discretion and no written agreement would even be signed without this proviso being contained therein, so that the idea of entering an action for wages for balance of season's earnings is generally an erroneous one in the absence of expressed stipulations to the contrary in a duly witnessed written agreement and as we have said such would never be entered into by a shipowner.

A DUE RECOGNITION OF SERVICES.

Foreign, and notably, British admiralty courts invariably award a stated amount of salvage to the masters, officers and crew of the rescuing ship. We have chronicled within the past few issues of the Record the first case ever known on the lakes, wherein, salvage services were so recognized by our courts. The precedent having been established we trust that this feature will become customary and a due award allowed in all cases for extraordinary and heroic services so rendered as to save life or property.

There is, however, another phase to this recognition, part of it which we should also like to see brought about at an early date, and that is, a mark of appreciation from underwriters in cases where the engineers, master, officers or crew engaged in meritorious services for the financial advancement or in mitigating the loss of underwriters. Lloyd's, of London, do not hesitate to acknowledge their indebtedness to men who through their talents, skill or extraordinary hardships, effect repairs at sea and thus save expensive re-insurances, and besides untold anxiety to those interested in the safe arrival and general welfare of floating property.

There has been many cases where lake underwriters should have taken cognizance of the special services renderd in thir behalf by the crews of vessels, more especially do these casualties or opportunities for distinguished ability and assistance occur towards the fall of the year, and it is a questionable factor in lake underwriting today how much money the insurance companies may have hitherto sacrificed by not being duly liberal in their recognition of individual efforts towards rescuing "a part to save the whole" or that portion of the remaining property left in jeopardy.

The first marine insurance company or general agency doing a lake business that will strike off a valuable medal, present a watch, a pair of marine glasses, binocular or otherwise properly recognize services, rendered in behalf of their body of underwriters, will no doubt find their business enhanced within a very few seasons after the custom is started, as it will only require to be known that the bulk of the insurance is placed with that office (and whether re-insured or not is immaterial), when every possible human and mechanical assistance will be eagerly and honestly given to the risk in distress. Such has proven the result of such a departure in all other parts of the world and we fail to see why it would not act in the same beneficial manner on the lakes, we would at least advocate its trial, nor can a lake shipowner be found who would not like to see his employes fairly recompensed for their share of the honors earned.

JAPANESE WAR VESSELS.

Japan, with which country we are likely to be drawn into much closer commercial relations than ever before, especially on our western borders, is one of the most progressive maritime powers on the face of the earth, and she is destined to soon show her commercial equality with the greater powers also.

There is now under construction to the order of the Japanese Government a small modern naval fleet whose guns may at some future time be turned against the nationality that constructed them, nor can the calibre of the native Japanese in warfare either on sea or on land be scoffed at, as witness the dance that they recently gave the Celestials and the foreign officers in the Chinese navy.

It is of course well known that Japan had British-built vessels with modern ordnance, well manned and maneuvered with skill and alacrity, no country could ask for more, except, that they had not built their own craft. With the completion of the two cruisers now being built in the United States and the vessels building in the United Kingdom, we venture to say that Japan will ask for no more foreign assistance or intervention in building for herself a navy second to no other equal power.

It is learned that the two ships for Japan now under construction in this country are modeled after the English designs represented in the Yoshino, built at the Armstrong works, which took part in the sea fight off the Yalu. The displacement is 4,000 tons, a little more than the displacement of the U. S. cruiser Chicago. The Japanese vessel is 396 feet long on the water line, the Chicago 325 feet. The beams are nearly the same. The draught of the Japanese vessel is to be 17½ feet against 20½ feet for the Chicago. The Japanese vessel is but 16 feet shorter on the water line than the Columbia, one of our first-class vessels, although her displacement is 2,700 tons less. The new vessel has also speed, the requirement being 22½ knots.

The armament of the two new ships shows several points of superiority over our latest built, all of which the Japanese were quick to recognize and from which they will no doubt take due advantage of in the future. Already are they starting a navy yard and with such models and patterns ahead of them the Japs will need no further coaching in naval or mercantile shipbuilding such as they have felt themselves compelled to endure in the past.

Attention may be turned, however, to our Pacific Coast line and its proximity to the rising commercial importance of our energetic neighbors to the West. Japanese trade, imports and exports, will soon have more or less effect on the lake trade as it can be made in a great measure tributary to the lakes and oriental influences have already been felt with a greater share of it to follow in the very near future.

SOUTHERN SHIPMENTS.

No effort is being spared to open up the Southern ports for the receiving and over-sea trans-shipment of western and southwestern products. H. B. Cullom, chairman of the Galveston deep-water utilization committee, states that Galveston is the natural outlet of 55 per cent of the cereals produced in the Northwest that have to be exported over consumption. "We are the second cotton port of the United States. Our business here makes the following showing of increase over 1895-96. In the number of steamers, 55 per cent; net register tonnage, 68½ per cent; bales of cotton, 62 2-3 per cent; bushels of grain, 105 per cent; tons of oil cake and meal, 53½ per cent, which will be doubled this year from present outlook of crops.

"Of the $50,000,000 of capital invested in shipping lying idle in winter on the lakes. I have always thought a good part might be utilized in the employment of tonnage that will be available caused by the contract method. Pooling of steamship lines with railroads have given us a rail rate by water to New York. What we want is water rates like those on the lakes. Barge lines touching at different points on the gulf, like traffic on the lakes, is very much needed, and would develop many ports by having a regularity of service to which trunk lines of railroads could furnish a large amount of business."

Mr. Cullom, to the contrary notwithstanding, but if he only knew it the fresh and salt water trades won't combine for any good purpose, at least where shipowners are concerned, as it would take or cost the vessels their net earnings to transfer, transform and fit them out specially for each trade.

Such is the present outlook, although in less than ten years from now such an opinion is liable to be laughed at and we may find metal vessels earning money on the lakes in the summer, besides enjoying their full share of profits in the Gulf and coast trades during the winter months, all of which is possible, but rather improbable, take it from any standpoint you wish. In a word, fresh and salt water won't mix worth a cent for any utilitarian purposes, as in trading with the same bottoms, fit out and equipment.

What was considered the enormous cargo of 5,000 tons, from Lake Superior to Lake Erie, was carried only last year and this, too, on ballast trim, say sixteen and a half feet mean draft. We reach this week to a 6,013-ton cargo from the head of the lakes, Duluth, to Lake Erie, also on a comparatively light draft, as in the coast and ocean trade a 400-foot vessel would hardly be moved without being put down to within a foot or two of what lake vessels draw—when fully loaded. Given a twenty-five-foot draft and these immense iron and steel carriers (or ships in disguise), would astonish the world in carrying capacity, speed and seaworthiness, not to mention the masterly fashion in which they are handled afloat and the style that their business is conducted in ashore. The steel schooner Amazon carries the world's pennant for big cargoes and this is only her second trip. When the mill bloom gets smoothly worn off her bottom shell plates and they learn the kindest way she trims, we may expect her to record transporting even a more gigantic bulk, until by-and-bye, it will be a case of one iron ore mine, one ship, so will business be expedited.

TO JOIN THE NAVY.

Lieutenant Commander J. M. Hawley, U. S. N., with a surgeon and a boatswain, will shortly start from Washington on a tour of the larger western cities with a view to securing hands to join the navy. The first stop will be made at Duluth, and then Chicago, Milwaukee, Toledo, Cleveland, Buffalo and other lake cities will be visited.

The plan is to open temporary offices in these places and secure for the navy as many of the lake sailors, fishermen and others as possible.

The project is to be credited to Lieutenant Commander Hawley. When the department came to realize the fact that not a full complement of ordinary seamen and sailors. and that men of high standing desired by the navy could not be procured in sufficient numbers in the coast cities, his plan was adopted and he was placed in charge of its execution.

Most of the native sailors who man our warships are from the coast cities, although recently some westerners have been drifting into the service, and it was felt that if this movement could be stimulated the navy would be benefited by securing a larger proportion of Americans in the service.

Letters received at the Navy Department showed that one obstacle to the entry of westerners into the service was the fact that the men who were willing and anxious to enter had not the means to reach the seaboard cities, where enlistments are made. It was for this reason that Lieutenant Commander Hawley was instructed to establish temporary offices for recruiting as he goes, where those wishing to join may apply and be sent in batches of ten or a dozen in charge of the boatswain to the nearest navy yard at the government's expense.

The terms offered to lake sailors are: For ordinary seamen, $19 a month, and for able seamen, $24, with an allowance of $1 a month extra to each upon re-enlistment and rations.

The recruiting officer also hopes to secure some machinists from the lake ports for the navy. The pay of these men in the navy is to be $70 a month, against an average of $45 on the lakes.

DAMAGE AND SALVAGE CASES.

Answers were filed recently in the United States Circuit Court in three admiralty cases brought in Duluth. The steamer Cormorant was libeled by the White Towing Co. for salvage. J. L.Crosthwaite, the owner of the boat, and the Export Lumber Co., owner of the cargo, in their reply claim that the Cormorant was not in any danger and that while her high pressure cylinder would have brought her into Duluth safely, and the engineer was connecting it up when the tugs Excelsior and Boeber came along and the former was given the job of towing the steamer into port. They are willing to pay a reasonable towing bill, but not salvage.

In the case of the schooner Knapp in which it is alleged that a large part of her deck load of lumber was lost off by the negligent manner in which she was towed by the tug Abbott, the answer denies the negligence and claims the captain of the schooner refused all offers of assistance in picking up the lumber.

The schooner Mowatt denies all liability for the damage to the dredge Superior on Portage Lake, throwing the responsibility upon the tug Valerie, which was towing her at the time of the collision.

WHAT'S IN A NAME?

A Cleveland weekly paper with some pretentions to hash up marine matters, stated recently, or according to its caption that, "Final A Bad for Ships" and then went on to say that insurance underwriters (as if by the way an underwriter could be anything else than insurer), look askance at vessels which have a final "a" in their names. The first letter of the alphabet is considered a hoodoo when it ends the name of a deep sea ship. Many of the serious wrecks of the last year have been of vessels carrying the "hoodoo letter."

Now this is the veriest kind of rot and ignorance, nor is it hardly worth noticing further than to call attention to the names of the Cunard Atlantic Liners Campania and Lucania, however, it is a distinguishing feature in the names of Cunard Line steamers as it is of many other prominent lines and first-class ships.

An item in another column of the same issue says that "Capt. Ed. Mooney, who was wheelsman at the time of a certain collision, received an order to port, that he ported a little and on looking at the compass found the ship's head was swinging to starboard." Holy sailor, how else would he have her head go? Again, that the colliding vessel was near them at the moment and showed her "green bright light," wonderful exhibition to be sure, they ought to have considered it a drug store bearing down.

Yet, perhaps, the final break in this ten-line item is given when we are told that with the help of the first porter he could heave the wheel in twenty minutes." Of course it was the first porter when the order was port, but the point we kept guessing at was how far, or where to, he was going to heave it in such a brief space of time, even with the help of the first porter who no doubt was a pretty muscular sort of a cuss, too. A correspondent of the Record's calls down the Free Press man again this week, but his driveling is simply for space filling purposes, while this other joker is found not to be slow in telling others how to run a business of which he can know little or nothing himself, hence the rap.

NEW BRUNSWICK-LIVERPOOL LINE.

Messrs. Russell & Co., shipbuilders, Port Glasgow, have contracted with Messrs. Wm. Thompson & Co., St. Johns, New Brunswick, to build four steel steamers of 370 feet keel and 4,000 tons carrying capacity, engines triple expansion, two sets to be constructed in Glasgow and two in Greenock. The new steamers will form a line between New Brunswick and Liverpool.

IS THERE DISCRIMINATION HERE?

The Milwaukee Wisconsin, well known as printing the best marine column of any daily on the chain of lakes, has the following to say anent the steamer Promise case:

"The fine of $500 recently imposed upon the ferry steamer Promise at Cleveland and paid is credited by the local inspectors to the fact that the steamer is not in shape to run on Lake Erie or any other open body of water. The government rgeulations provide that vessels engaged in carrying passengers on open bodies of water shall be provided with three cross bulkheads, a feature which the Promise lacks. Besides, the steamer's papers entitle her to operate only on Detroit River. A strict application of this government regulation concerning bulkheads would put nine-tenths of the steamers now engaged in carrying passengers on the lakes out of service.

THE CHIEF WANTS TO KNOW.

The amount of $700,000 was appropriated by the last Congress for dredging and improving Chicago River and harbor. It is now learned that Gen. Wilson, Chief of Engineers, United States Army, intends to inspect the finished and contemplated work in that vicinity. The exact date of the investigation has not yet been determined on, but it is expected that Gen. Wilson will reach Chicago in a few days. His purpose is to become thoroughly acquainted with the conditions and requirement of the river as a navigable waterway.

SLIGHTLY RETALIATORY.

At a meeting of the Dominion cabinet held at Ottawa on Tuesday it was decided to put the alien labor law in force in Manitoba, the Northwest territory and British Columbia at once, so as to protect Canadian workmen against those coming from the United States. Agents will be appointed immediately to enforce the law. This is in a slightly retaliatory spirit against the alien labor laws now being somewhat irritably enforced at some small ports, places and trades on the lakes.

DOMINION CUSTOMS DECISION.

A circular has been issued by the minister of customs at Ottawa canceling the regulation dated May 18, 1893, respecting the collection of duty on repairs to Canadian vessels in foreign ports. Customs duties hereafter are not to be collected on ordinary repairs to the hull, tackle or machinery of a Canadian vessel, when made in a foreign port. The exemption does not, however, apply to machinery from any country excepting the United Kingdom, if it be of a class or kind made in Canada. If a Canadian vessel is rebuilt in a foreign port the question of liability to duty should be reported to the department of customs for decision.

A NEW STEAMBOAT LINE.

The Holland & Lake Michigan Railway Co. has leased several hundred feet of dockage at Harrington's landing for a term of 30 years, and will build extensive docks. A line of boats will be established to Milwaukee. These will certainly require to be very light draft vessels as the bar at Holland fills up very quickly under certain weather conditions. This much can be said, however, that Holland today is in no worse a condition than Chicago or Cleveland was a few decades ago.

TREASURY DECISIONS RELATING TO VESSELS.

Treasury Department,
Bureau of Navigation,
Washington, D. C., May 26, 1897.

To Collectors of Customs and Others:

When the place and date of the building of a vessel has not been ascertained, any marine document granted to her, and the index thereof, should specify the date of her first document and the port of its issue.

EUGENE T. CHAMBERLAIN,
Commissioner.

Approved:
O. L. SPAULDING, Acting Secretary.

Vessels propelled by gas, fluid, naphtha, or electric motors, of above 15 tons burden, engaged in fishing or other business, must be inspected and carry licensed engineers and pilots.

Treasury Department, May 26, 1897.

Sir:—The Department is in receipt of your letter of the 20th instant, in reference to your "gasoline-motor" fishing boat, named Globe, of over 15 gross tons, and you ask whether the recent law (act of Congress approved January 18, 1897), will require said vessel to be inspected and carry a licensed engineer and a licensed pilot, in view of the fact that she is only "to be used in hauling lobster traps" and for fishing purposes.

In reply, you are informed that the law referred to requires "That all vessels of above fifteen tons burden, carrying freight or passengers for hire, propelled by gas, fluid, naphtha, or electric motors, shall be, and are hereby, made subject to all the provisions of section forty-four hundred and twenty-six of the Revised Statutes of the United States, relating to the inspection of hulls and boilers and requiring engineers and pilots." * * *

Therefore, the question for the Department to determine in your case is, whether or not the term "carrying freight or passengers for hire" is to be strictly limited to the actual words used, or whether such words are not subject to a broader construction, embracing all vessels so propelled of above 15 gross tons burden engaged in any business bringing profit to the owner from its use as is evidently the intention in the case under consideration.

This Department is inclined to adopt the latter construction and rules, that your gasoline fishing vessel, Globe, must be inspected, and must also carry a licensed engineer and a licensed pilot.

Your inquiry as to how you can get an engineer of steam vessels "to run a gasoline engine when he knows nothing about them, and don't wish to," is not one the Department feels called upon to answer.

Respectfully, yours, O. L. SPAULDING,
Acting Secretary.

R. PALMER, Jr., Esq.,
Secretary, The Robert Palmer & Son Co., Noank, Ct.

NOTICE TO MARINERS.

Office of U. S. Light-House Inspector,
Tenth District,
Buffalo, N. Y., July 14, 1897.

ST. LAWRENCE RIVER.

Notice is hereby given that a lighted buoy, painted black, has been placed on the reef WNW. of Rock Island Light-House in St. Lawrence River near the black spar buoy No. 23. This flashes white every alternate ten seconds.

Also, that a lighted buoy, painted red, has been placed at the entrance of Ogdensburg Harbor near the red spar buoy No. 2. This buoy shows a fixed white light. The spar buoys near these lighted buoys will soon be removed. Notice is also given that the following lighted buoys will be exhibited as soon as practicable after this date, viz.: In the St. Lawrence River, near the black spar buoy No. 17, SW. of Sunken Rock Light-House, a buoy painted black flashing white every alternate ten seconds.

In the St. Lawrence River near the black spar buoy No. 25, marking the NW. side of Feather Bed Shoal, a buoy painted black flashing white every alternate ten seconds.

In Lake Ontario near the second-class can buoy now marking the Charity Shoal, a buoy, painted red and black in horizontal stripes, showing a fixed white light.

The spar and can buoys now at the above named points will be removed as soon as practicable.

It is the intention of the Light-House Board to mark the rock in the Southwestern entrance of the Lower Narrows (to the North and West of Brock's Group) by a lighted buoy, of which due notice will be given.

THEODORE F. JEWELL,
Commander, U. S. Navy, Inspector.

H. C. BURRELL,
Marine Reporter.
We can Supply Men and Officers to Passing Vessels

BOAT ON THE RIVER
AT ALL HOURS,
NIGHT OR DAY.

Signal: One long two short.

Our boats are white. We'll treat you white and deal with you

ON THE SQUARE.
OFFICE:
FOOT WOODWARD AVENUE,
DETROIT, MICH.

F. W. WHEELER & COMPANY,
BUILDERS OF ALL KINDS OF
Iron, Steel, and
Wooden Ships
FOR LAKE OR OCEAN SERVICE.
West Bay City, Mich.

F. W. WHEELER, Pres. H. T. WICKES, V. P.
J. S. PORTER, Treas. C. W. STIVER, Sec'y.

FRONTIER Iron Works.
MARINE ENGINES.
DETROIT, MICH.

William Wilford's
MATCHLESS
WATER-PROOF
CANVAS.

WILLIAM WILFORD'S MATCHLESS WATERPROOF CLOTH

The best in the market for hatch covers, is stronger, lighter, and more durable than any water-proof goods yet produced. It is made of a twisted thread of pure flax, which renders it very strong. It will not crack like cotton goods, which is a great advantage.

EDWARD A. BUNKER,
ROOM 617, 27 AND 29 WILLIAM ST., NEW YORK.

HERCULES
PEERLESS RUBBER M'F'G CO. N.Y.

Always Tight.
Leaves the Stem Clean.

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Put up in Boxes.
Write us for Testimonials.

HERCULES COMBINATION
METALLIC STOP VALVE PACKING
Patented and Manufactured Exclusively by
PEERLESS RUBBER MFG. CO.,
16 Warren Street, New York.

16-24 Woodward Ave.,
DETROIT, MICH.

193-195 Bank St.,
CLEVELAND, O.

202-210 S. Water St.,
CHICAGO, ILL.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., agents and ship brokers, New York, furnish the Record with their current freight report, as follows: Since our last report steam freights have maintained their advancing tendency, and by this means driven some shorts into covering their trades, which under the momentary absence of disengaged tonnage pressing on the market, could only be affected at somewhat better range of freights. The position of our market for grain freights otherwise remains unchanged, and will only gather permanent strength in later months, for which prices are under the level at which cash grain is held at present. Berth freights as yet answer but feebly to advanced rates for full cargoes, but, inasmuch as the absence of pressing tonnage is felt both at the deal and timber ports, and resulted in fixtures thence at from 1s. 3d.@2s. 6d. better figures, outside charters for general cargo are now covering themselves in most instances at a loss. Enquiry for other trades is not active, but some fixtures on the net basis have been made for August-September loading from New Orleans and Galveston, which ports, contrary to prospects prevailing until quite latterly, now expect to have grain and a fair amount of cotton moving thence in the latter part of August.

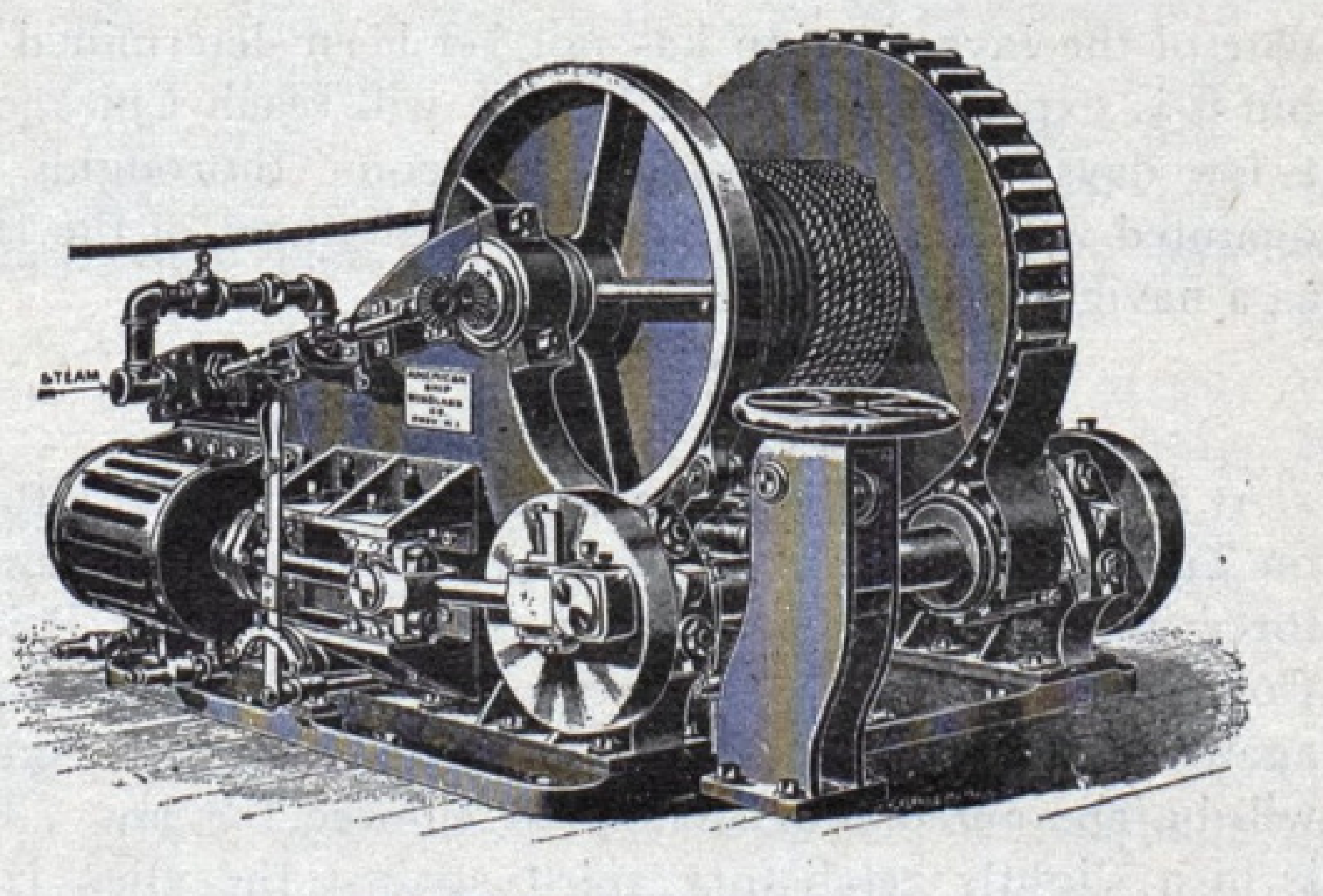
The only change noticeable in the freight market for sailing tonnage is a somewhat improved demand on part of the naval stores trade for vessels to load in Southern ports during the next few months, and rates thence may be quoted at 2s. 6d. @ 2s. 9d. for rosin, according to ship's capacity. Other branches present absolutely no new features. The general market remains very firm because of the continued light offerings, with the demand for tonnage not very pressing as yet.

STEAM TOWING MACHINE.

(Illustrated.)

It is now learned that besides the large tug building at the yards of F. W. Wheeler & Co., West Bay City, Mich., to the order of W. G. Wilmot & Co., New Orleans, a steam towing machine and complete outfit, including steam windlass, iron towing bitts and double-barrel capstan is to be furnished the large powerful new tug just contracted for by the firm of Messrs Brown & Co., of Pittsburg, Pa.

These tugs will receive a duplicate outfit from the American Ship Windlass Co., and such as to make them the most efficient vessels for their class of work in the United States, and in fact the equals of any craft in the towing business at any port in the world, from an economical standpoint, their excellent equipment will probably allow them to eclipse or lay over anything yet put afloat.



STEAM TOWING MACHINE
As manufactured by the American Ship Windlass Co., Providence, R. I., for river, lake and coast towing purposes.

SMART REPAIRS MADE BY THE DETROIT DRY DOCK ENGINE WORKS.

Much credit is given the Detroit Dry Dock Engine Works for the brisk and excellent job done on the passenger steamer State of Ohio of the C. & B. Line. As will be remembered, this steamer completely wrecked her engine and reached the Dry Dock Engine Works on June 4. It was found that the breaking of the connecting rod with the piston on the down stroke, broke the beam center or skeleton, beam pillow blocks, main and air pump, cross heads, beam links, steam cylinder, condenser, channel and bed plate, air pump and hot well.

Steam was up and the vessel ready for work again with her machinery in as good a shape as when near early on July 2d, or at an estimate of 28 days from the time she was turned over to the engine builders.

The credit of this quick work is no doubt due to the skill of the machinists employed by the Dry Dock Engine Works, and it is learned that every man in the several departments tried to make a record job on this much-wanted and favorite passenger steamer, especially as this is the height of the traveling season and every day or even hours lost in repairs meant a corresponding financial loss to the owners of the boat.

In speaking of this particular job, one of the leading men in the works, said: "It is no great wonder that we made such time after all, for, there is a class of young men in our shops that have been brought up with the company and this is their shop, when we move on the enemy he is ours and we could easily tackle something bigger than this job." Mr. C. B. Calder, who worked his way up to be one of the brightest and most capable of chief engineers on the lakes, afterwards being appointed shore engineer of the Mutual and Menominee Lines of steamers out of Cleveland, is now the superintendent of the Dry Dock Engine Works, and his work always speaks for itself.

Preparations are being made by the Otis Steel Company, at Cleveland, O., to cast a big steel gun. Dr. R. J. Gatling, the inventor of the Gatling gun, is of the opinion that it is possible to make a modern heavy ordnance of cast steel. In 1876, after years of effort, he obtained an appropriation of $40,000 from Congress with which to make a test. The gun will be eight inches in bore, twenty-three feet long, and will weigh about twenty-five tons. The casting will be done by the Otis Company, and the gun will be bored by the Cleveland City Forge Company.

DETROIT RIVER POSTAL SERVICE.

List of letters returned from marine postoffice and advertised at Detroit, Mich., July 16, 1897:

Barnes, I. I.
Bernard, Jno. (2) Str. Preston.
Bates, Chas.
Bennett, T. C., Str. India.
Bush, Harvey, Schr. L. W. Drake.
Bagner, Jno., Schr. A. W. Knight.
Blom Soren.
Chamberlain, Capt. C.
Crowl, Wm., Str. Preston.
Cunning, Alex.
Carlisle, A.
Christie, Jno.
Conley, Jno.
Dunlap, D. A., Str. India.
Davis, David, Str. W. B. Morley.
Dawson, Gus.
Frenzen, Jesse, Str. Appomatax.
Foote, Jas. B.
Falconer, Jas.
Fraser, Hurb.
Harris, Robt., Str. J. D. Marshall.
Hamacker, Chas. W.
Hardick, Richard, Str. Republic.
Lee, E. N., Str. Vulcan.
Lavely, Peter.
Miller, Geo., Str. India.
Kunna, Capt. Geo., Schr. Worthington.
Mitchell, Henry L.
Outhwaite, John N.
Redford, Jno.
Realff, J.
Roach, Jas., Yacht Azalea.
Stakke, H.
Shaffer, J. H. (2), Barge T. H. Foster.
Szat, Jos., Barge A. B. Norris.
Strefflebean, Capt. Ed.
Smith, Gabriel.
Taylor, D., Str. Republic.
Turner, George.
Taylor, George.
Van Gorder, Mrs. Nellie.

JOHN. J. ENRIGHT, P. M.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record by George F. Stone, Secret ry Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels	BARLEY. Bushels.
Albany	....	5.000	60,000	....	....
Baltimore	507 000	644.000	142,000	11.000	....
Boston	201,000	1,165.000	107 000	....	1,000
Buffalo	883,000	817,000	548,000	120,000	241,000
" afloat	....	....	....	....	....
Chicago	3,830,000	7,740,000	1,724 000	411,000	8,000
" afloat	....	....	....	....	....
Cincinnati	1,000	3 000	9,000	....	1.000
Detroit	28,000	29,000	10,000	16,000	3,000
" afloat	....	....	....	....	....
Duluth and Superior	937,000	17,000	334,000	367,000	245,000
" afloat	....	....	....	....	....
Indianapolis	....	44,000	....	....	....
Kansas City	81.000	172,000	120,000	8,000	....
Milwaukee	106,000	3,000	1.000	136,000	68,000
" afloat	....	....	....	....	....
Minneapolis	8,056,000	83,000	161,000	15 000	10,000
Montreal	156,000	34.000	411,000	35,000	35 000
New York	784,000	1.555,000	1,778,000	436,000	72 000
" afloat	15,000	103,000	....	17,000	10 000
Oswego	....	98,000	43,000	....	....
Peoria	....	1,000	29,000	....	....
Philadelphia	48,000	142,000	166 000	....	....
St. Louis	74,000	337,000	36,000	4,000	....
" afloat	....	....	....	....	....
Toledo	220,000	321,000	25,000	67,000	....
" afloat	....	....	....	....	....
Toronto	87,000	....	46,000	....	6,000
On Canal	158,000	490,000	76 000	233,000	48,000
On Lakes	437,000	1.593.000	1.078,000	221,000	53,000
On Mississippi	....	29,000	45 000	....	....
Grand Total	16,609,000	15,425,000	6,949,000	2,097,000	801,000
Corresponding Date 1896	47.220 000	9,188,000	8 228,000	1,455,000	768,000

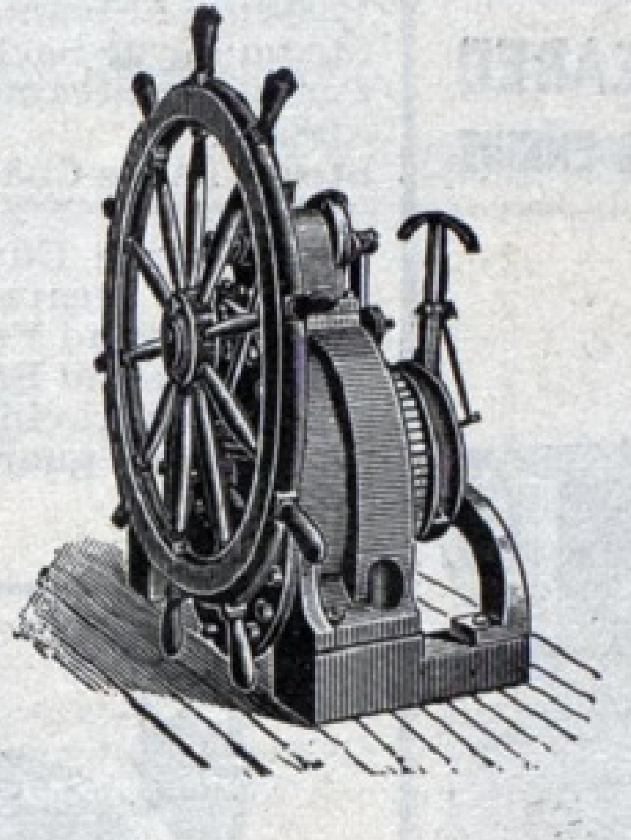
TACOMA COMMERCE.

Harbormaster Clift makes the following report of the ocean commerce at the port of Tacoma for the month of June, 1897:

IMPORTS.	Value.
Cargoes of N. P. steamers Mt. Lebanon, Braemar, Mogul, Tacoma, Pathan and Victoria, consisting of tea	$1,694,792 00
Oriental merchandise	368,633 00
Total	$2,063,425 00
Previously reported	2,540,086 62
Total imports six months	4,603,511 62

EXPORTS.	Value.
25,000 bushels wheat	$ 16,250 00
19,765 barrels flour	71,154 00
5,045,000 feet lumber	45,545 00
33,150 tons coal	99,450 00
Merchandise to China and Japan	54,846 00
Merchandise to British Columbia	28,940 00
Total	$ 316,185 00
Previously reported	2,407,948 14
Total exports six months	$2,724,133 14
Inward registered tonnage	66,239
Inward cargo tonnage	26,250
Outward registered tonnage	49,313
Outward cargo tonnage	49,313
Deep sea arrivals	41
Departures	39

Queen City Hydraulic Steerer.
THE BEST AND MOST POWERFUL STEERER FOR TUGS, STEAMERS, ETC.



MANUFACTURED BY
Queen City Engineering Co.
BUFFALO, N. Y.
Write for Prices and References.

TOBIN BRONZE
(Trade-Mark Registered.)
Tensile strength, one inch cold drawn rod, upward of 78,000 lbs. per square inch. Torsional Strength equal to the best machinery steel. Non-corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Piston Rods, Yacht Shaftings, etc. Spring Wire, Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.
Ansonia Brass & Copper Co.
SOLE MANUFACTURERS,
Send for Pamphlet. 19-21 Cliff St., NEW YORK.

INCORPORATED 1794.
Insurance Company of North America
CAPITAL, Paid up in Cash, - - - - $3,000,000.00
ASSETS, - - - - - - - - 9,686,808.08
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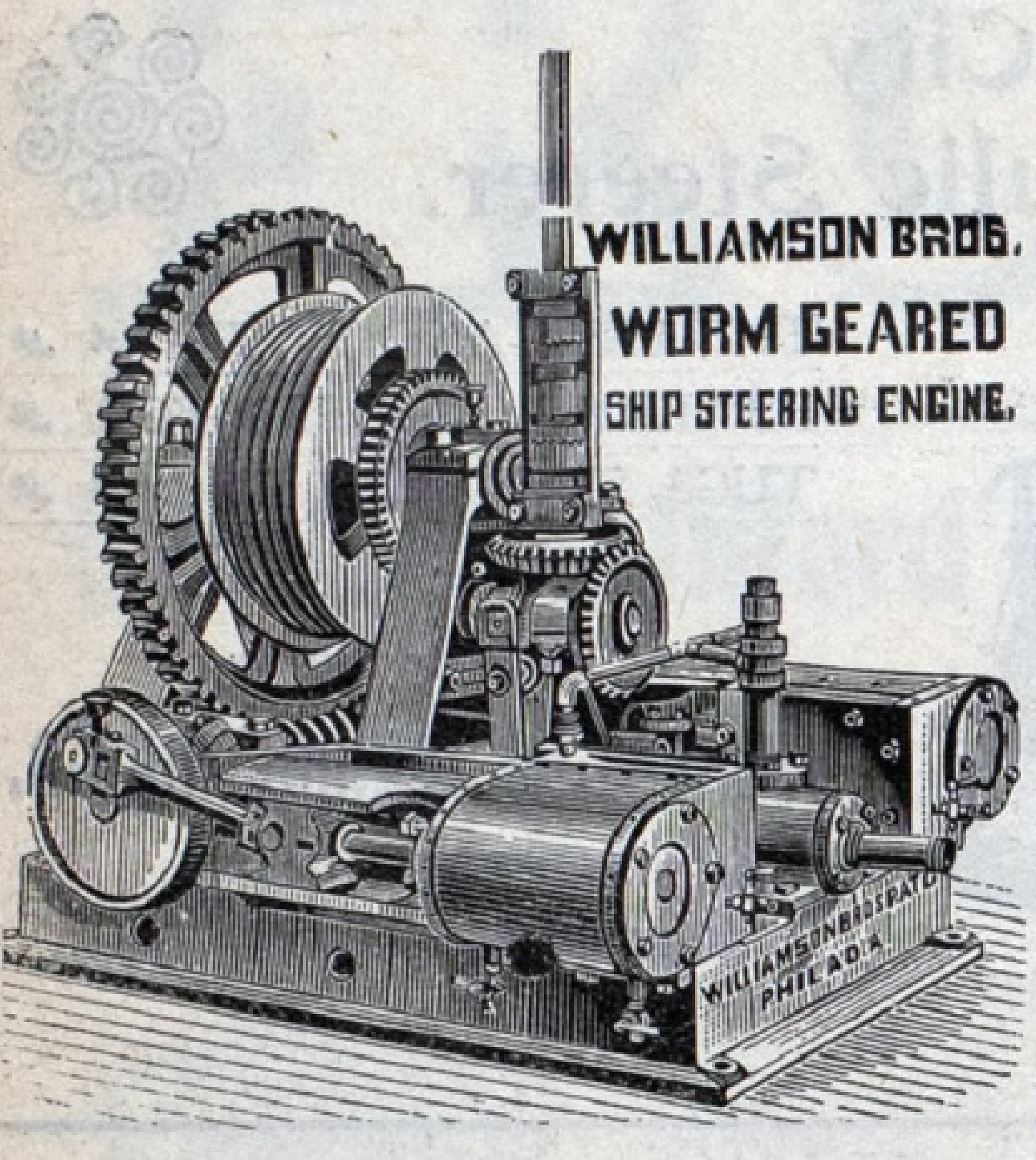
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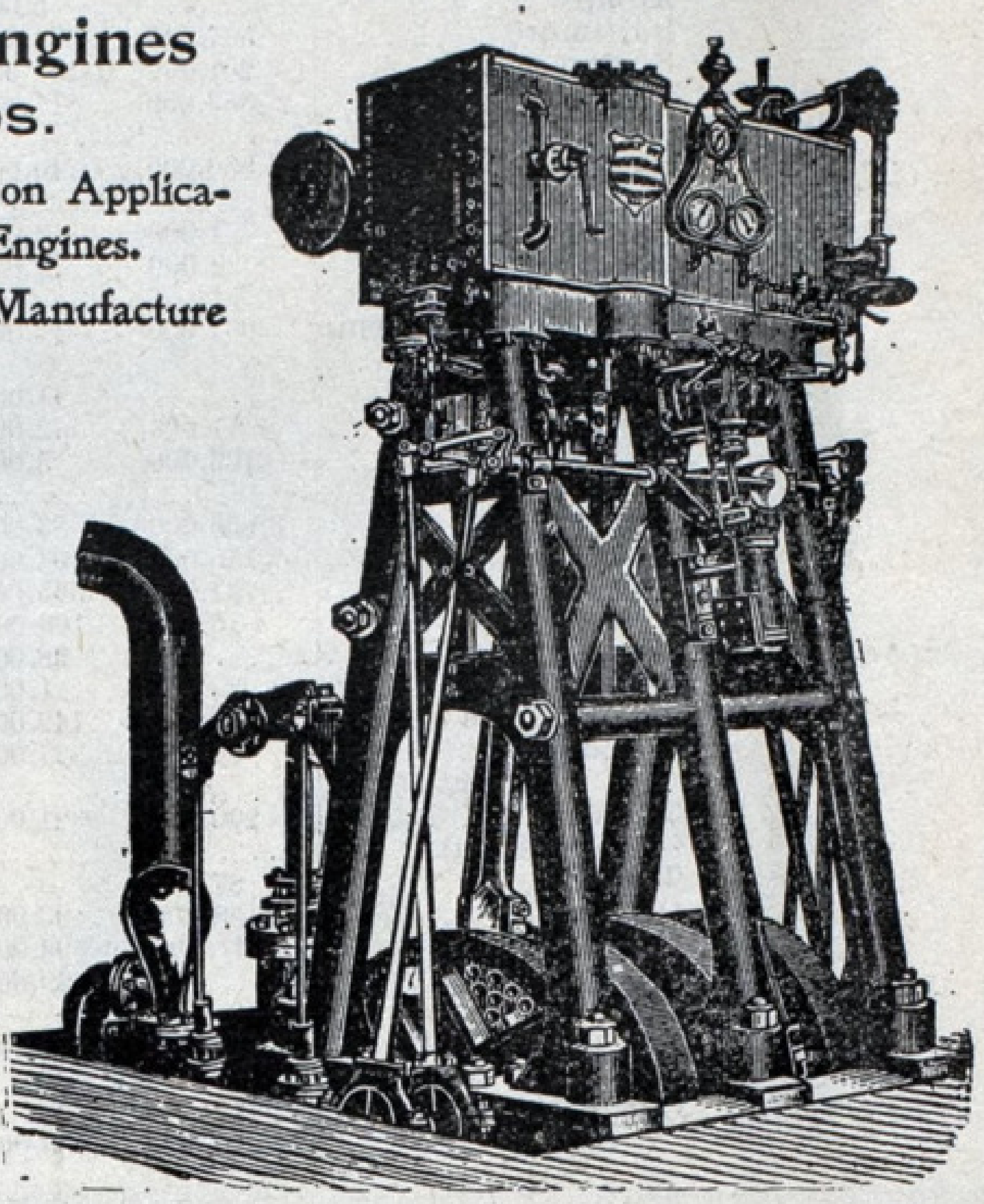

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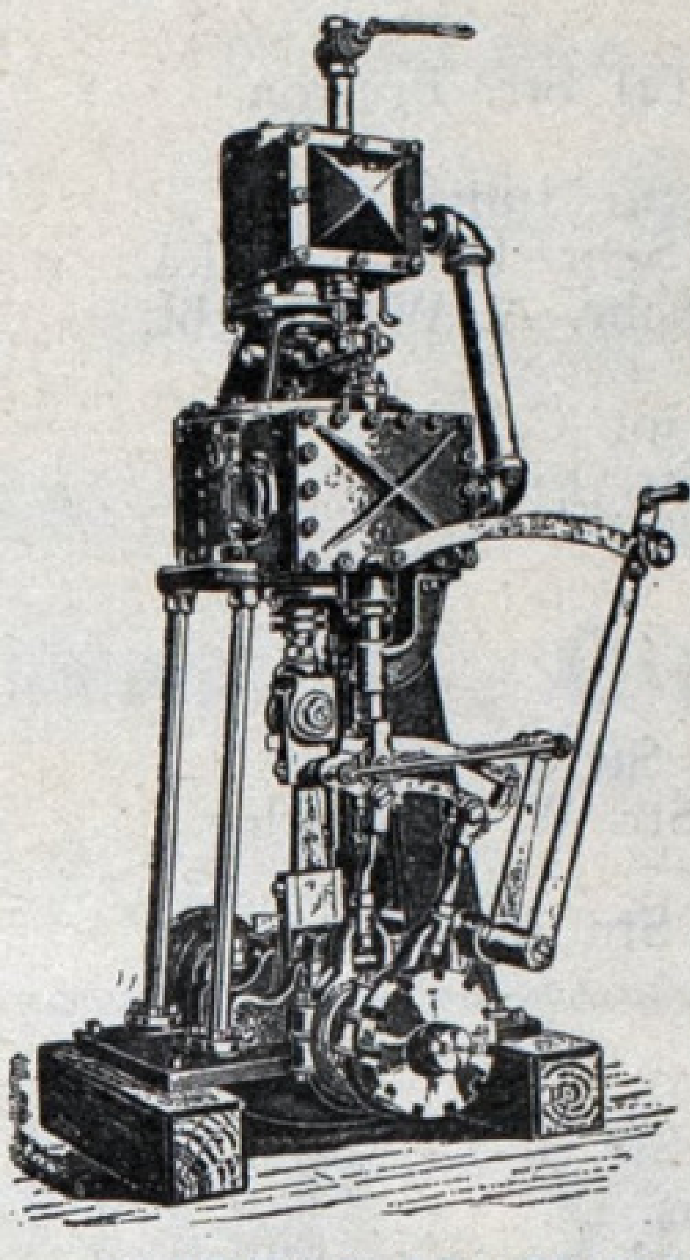

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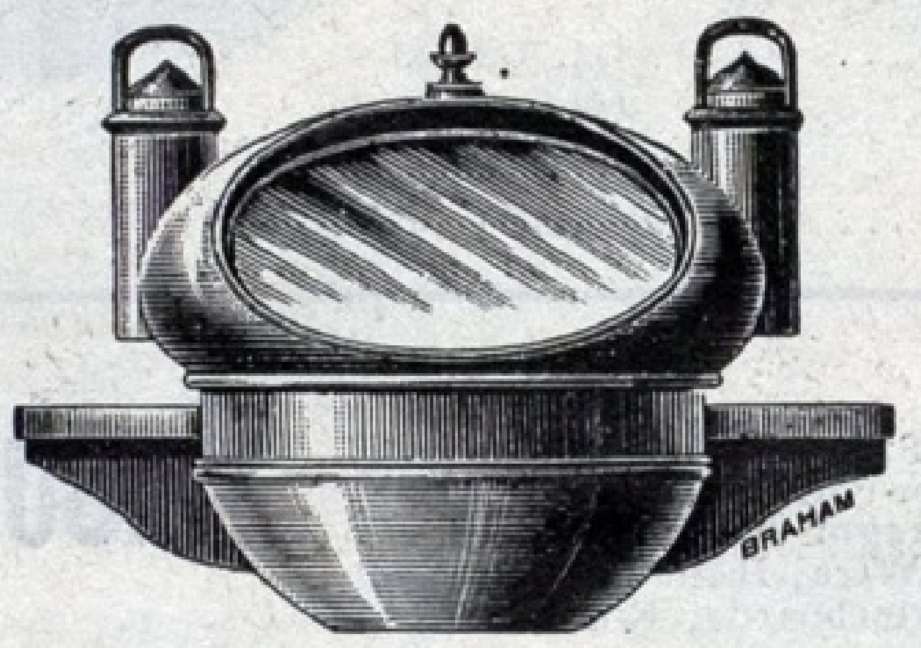

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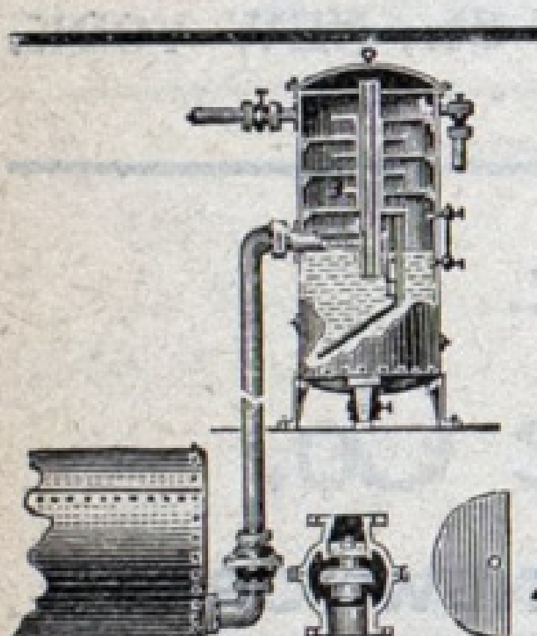

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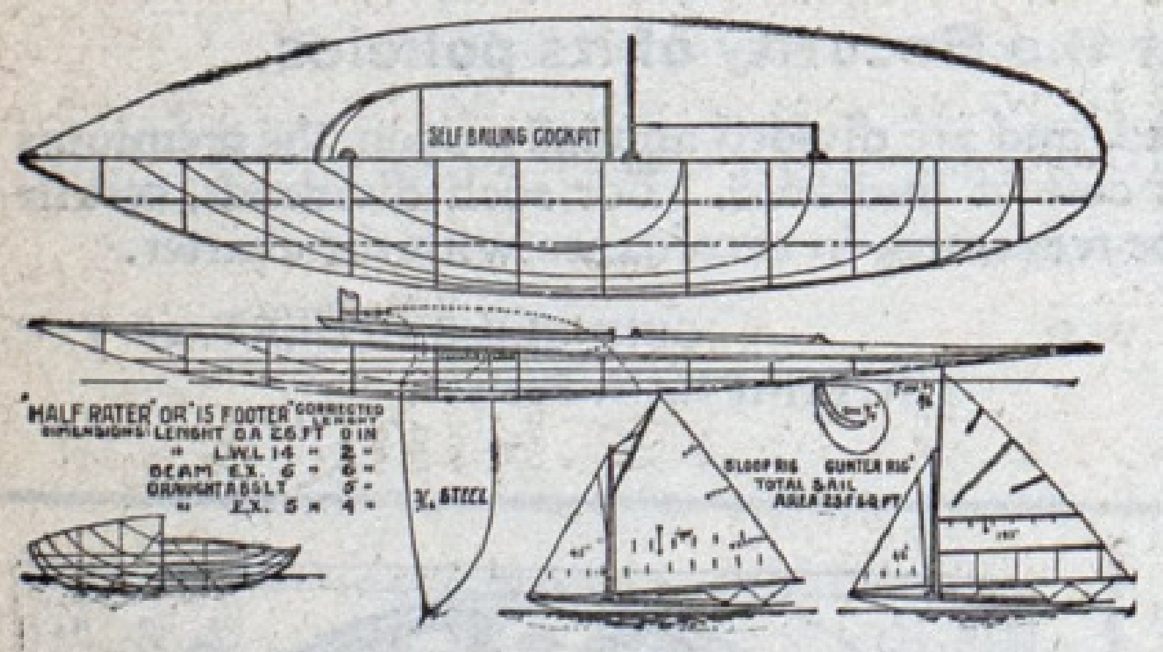

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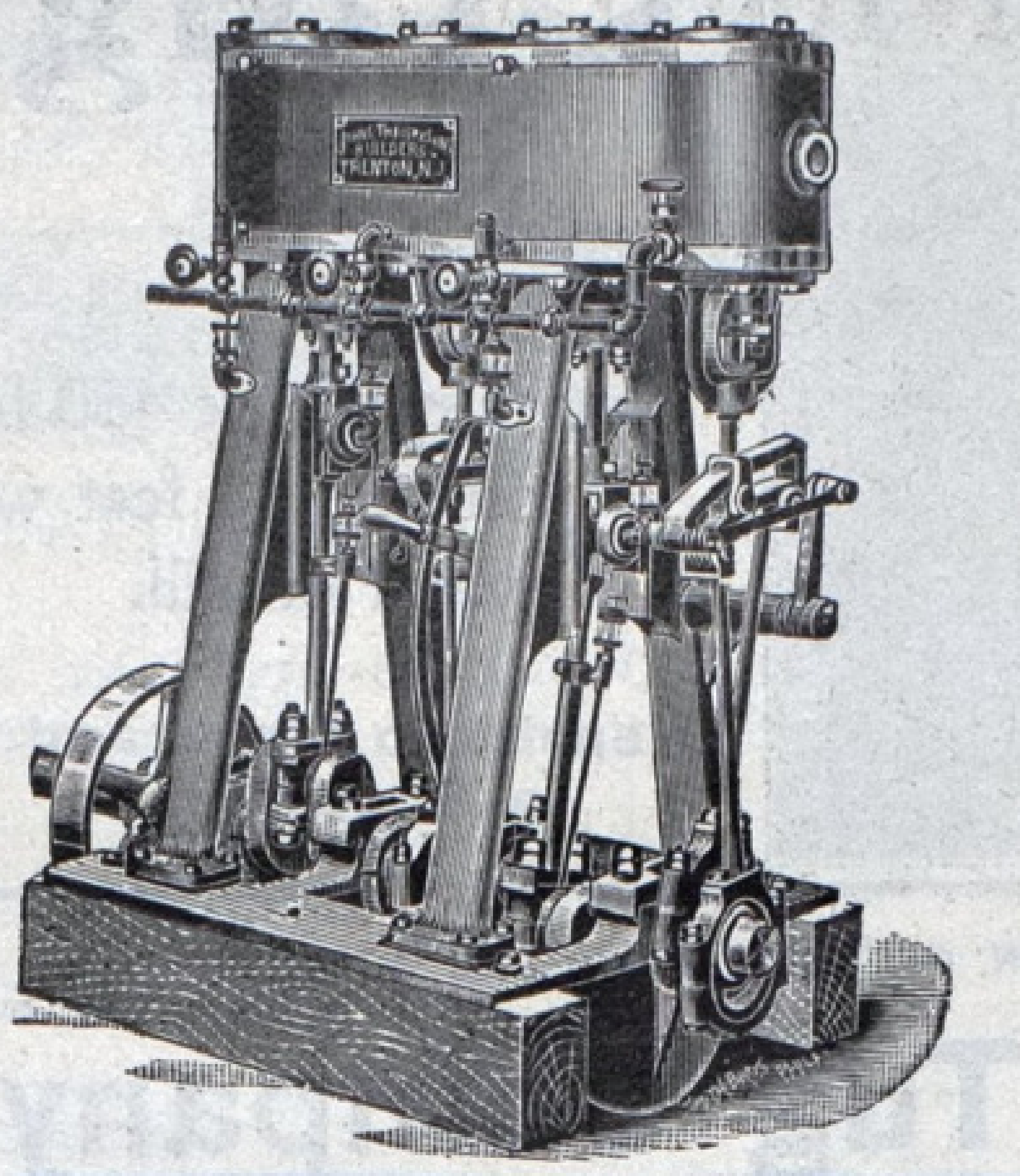

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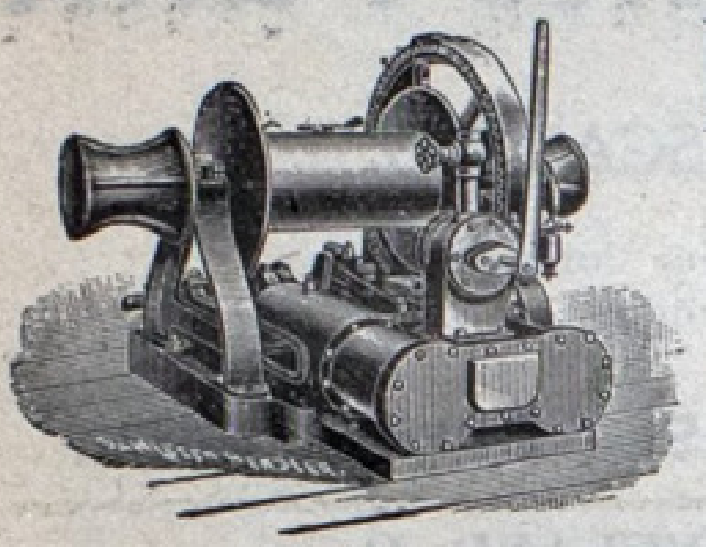

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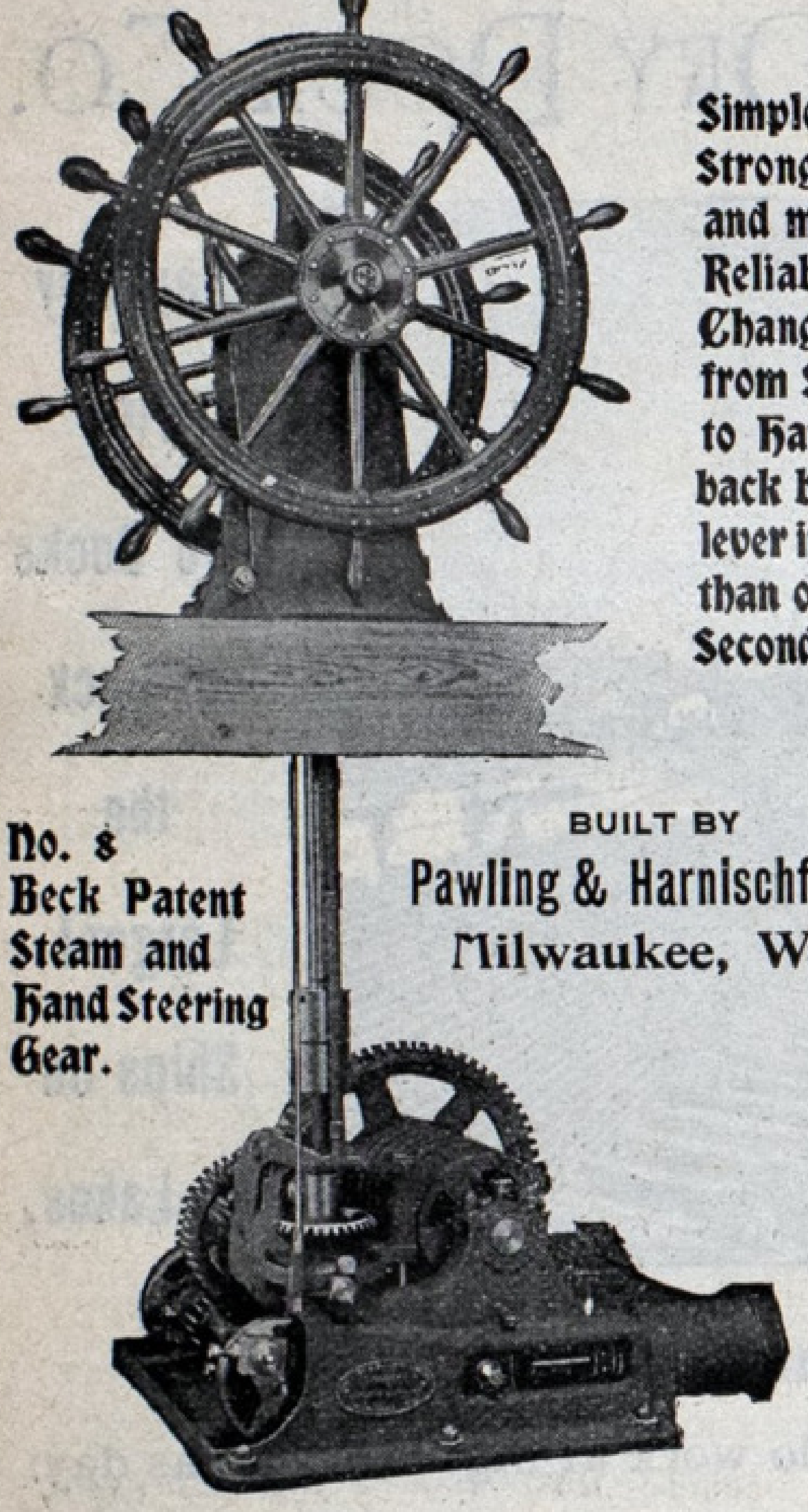

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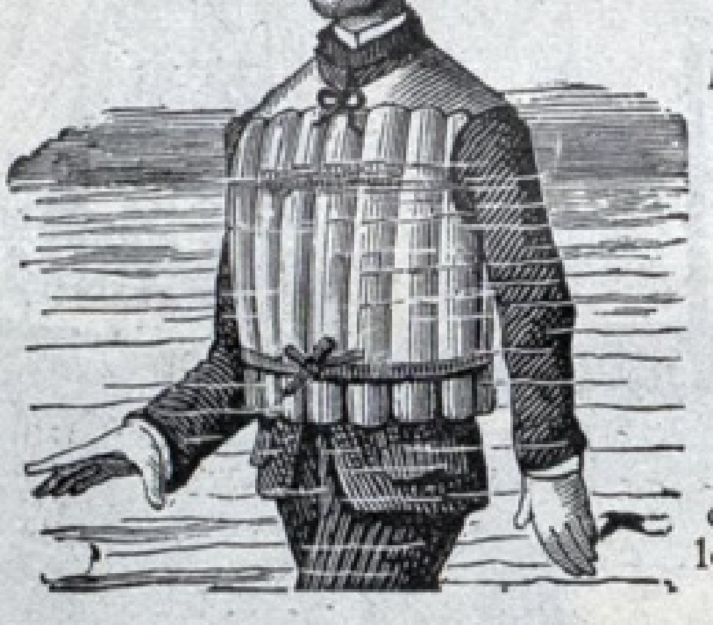

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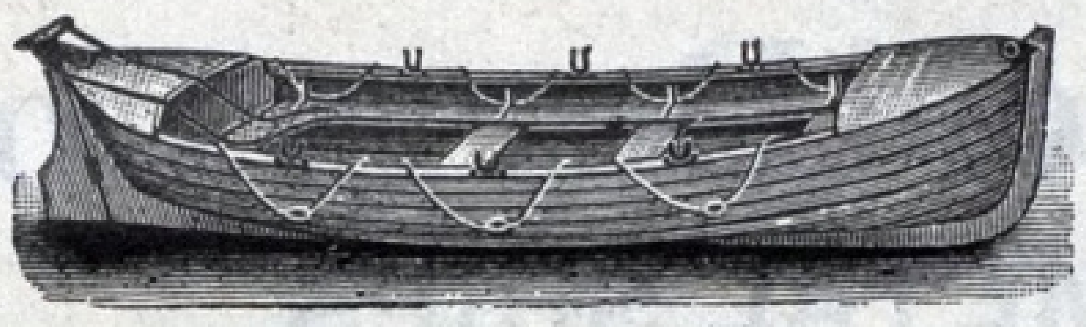

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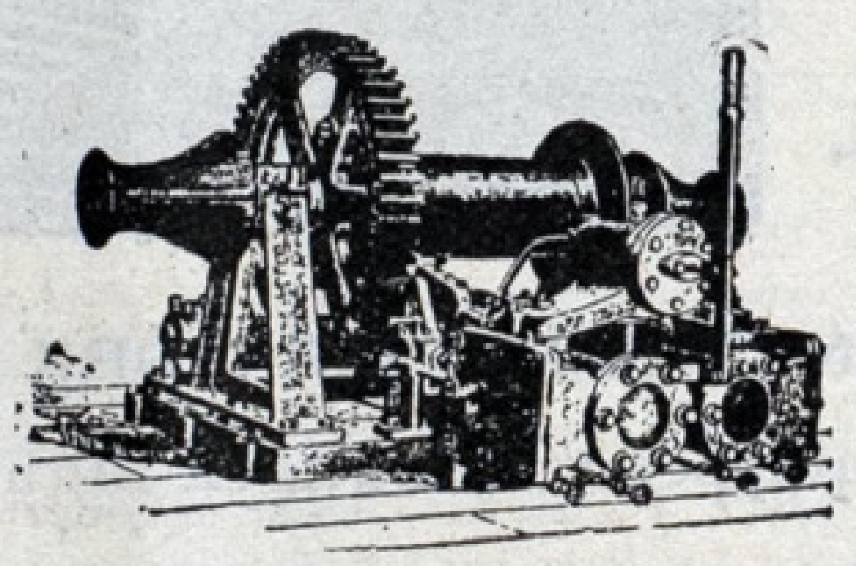

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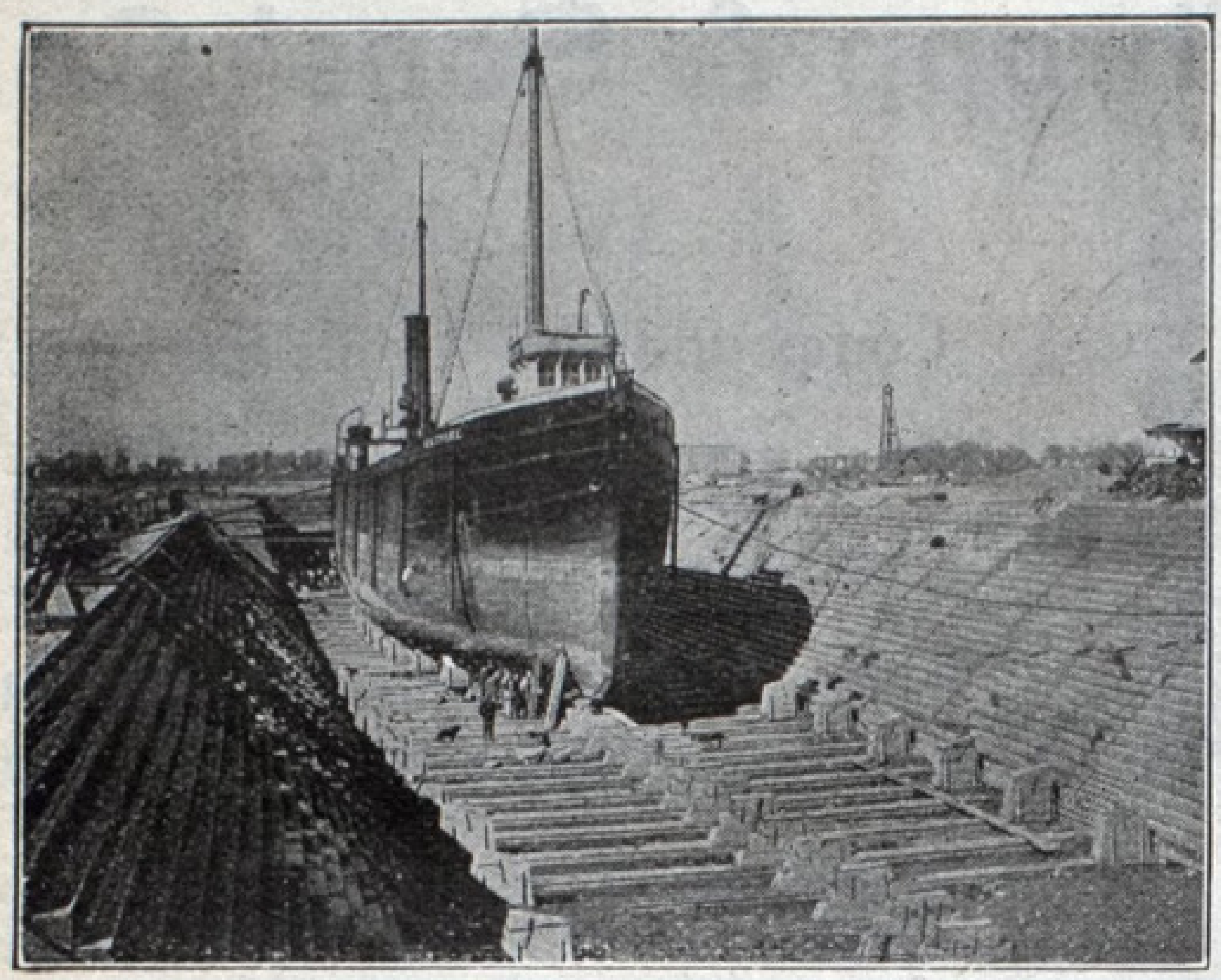

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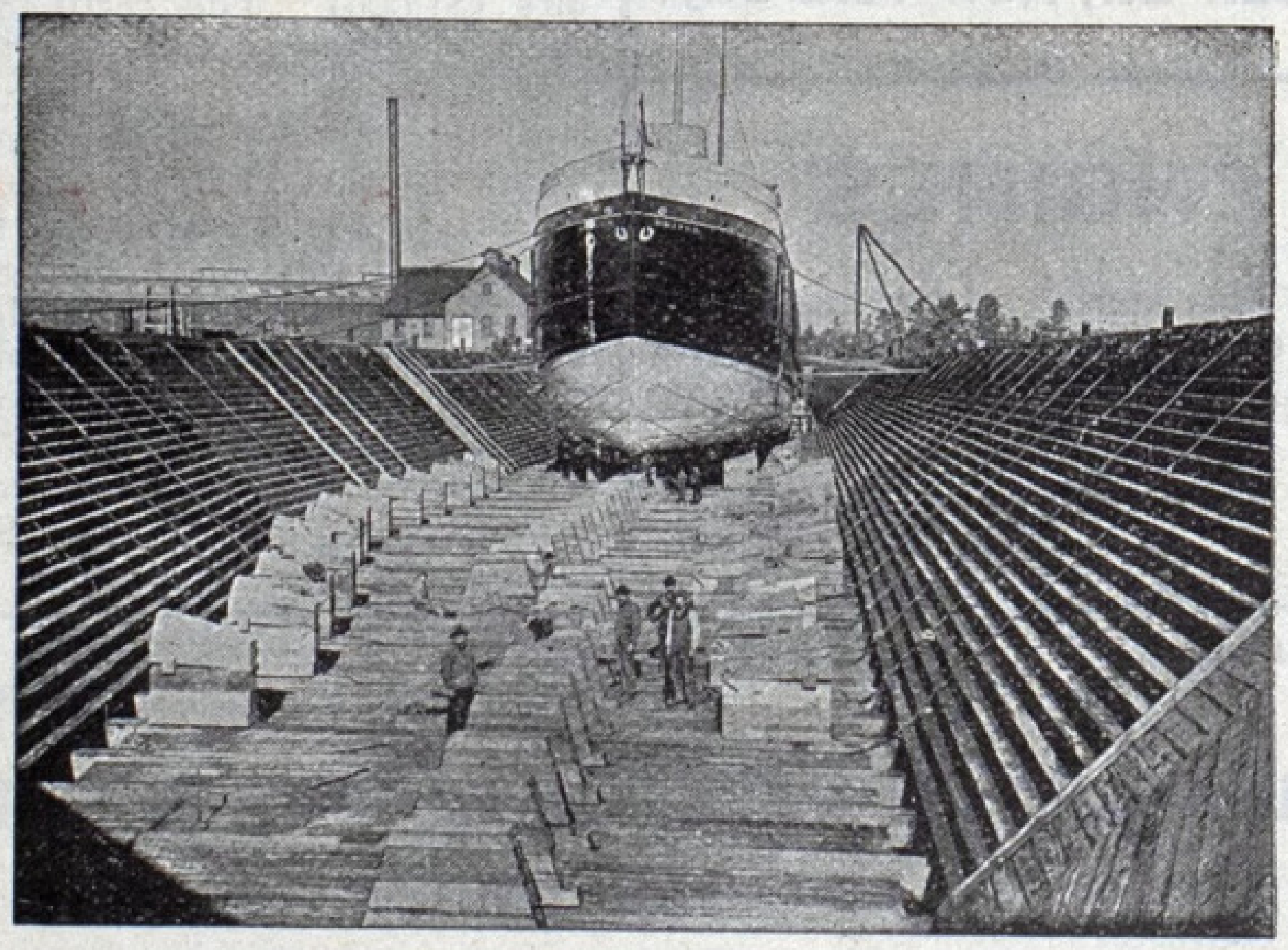

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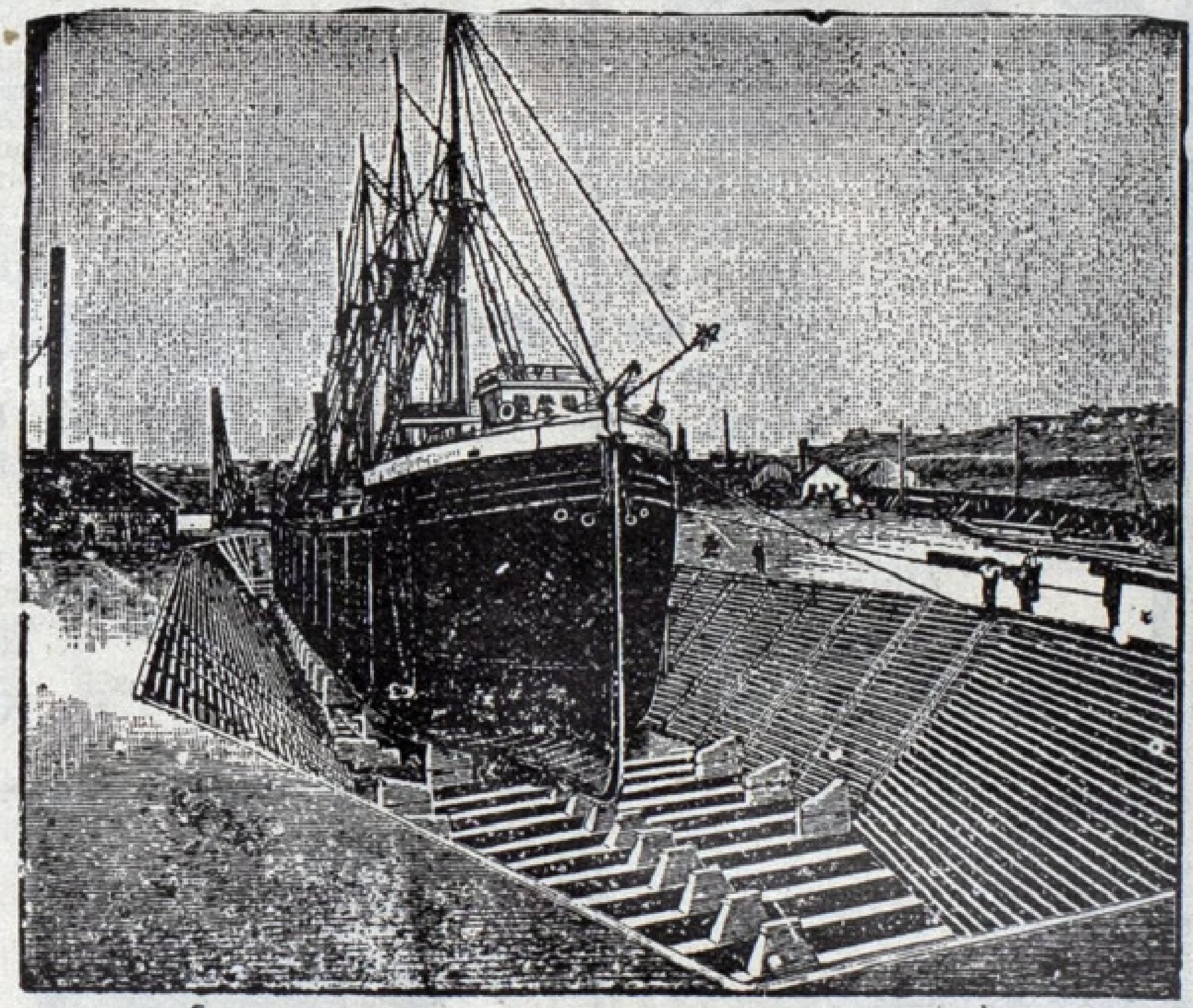

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